

# MANUFACTURERS' RECORD

A  
WEEKLY SOUTHERN INDUSTRIAL  
RAILROAD AND FINANCIAL NEWSPAPER.

## CONTENTS.

### EDITORIAL.

The Mississippi River	5
A Bright Future for Roanoke and Salem	5
How Some Southern Marshes Could Be Utilized Profitably	5
Financial Condition of the South	6
Texas Enterprises Not To Suffer	6
Domestic Silk Culture	7
Instruction in Horticulture	7
Editorial Short Notes	5, 7, 8, 9

### INDUSTRIAL NOTES.

Trade Notes	45, 50, 56
Illustrated Descriptions of Machinery	45, 53, 56, 65
Iron Market Report	66
Eastern Lumber Markets	70

### FINANCIAL DEPARTMENT.

New Banks	36
Bonds, Stocks and Other Notes	36
Southern Stock Quotations	37

### CORRESPONDENCE AND NOTES.

Letters from the South	8
Work of the Mississippi River Commission	8
Opelika, Ala.	9
General Notes	10
Progress at Cardiff	11
Dallas Development	11
Growth of Blacksburg, S. C.	11
The Cotton Oil Financial Plan	35
Buena Vista Notes	36
Mountain Passes of the Cumberland	40

### CONSTRUCTION DEPARTMENT.

Full particulars regarding all industrial enterprises organized in the South during the past week	38-40
Building Notes	40
Burned	40
Machinery Wanted	42

### RAILROAD DEPARTMENT.

Railroad Construction	35
Various Railroad Notes	35

VOL. XVIII  
No. 6.

\$4.00 per year.  
Single Copy  
10 Cents.

Baltimore, September 13, 1890.



# Classified Index of Advertisers.

(For ALPHABETICAL INDEX WITH PAGES, SEE PAGE 75)

- Acid Chambers.**  
Tompkins, Oliver & Co.  
Edw. Allen.
- Air Compressors.**  
Ingersoll-Sergeant Rock  
Drill Co.  
Rand Drill Co.
- Architects.**  
Gray & Fitch.  
Raeder, Coffin & Crocker  
C. R. Makepeace & Co.  
Lockwood, Greene & Co.  
Drew, Baldwin & Co.
- Architectural Iron Work.**  
Chickasaw Iron Works.  
Manly Mfg. Co.  
Artesian Wells.  
Cook Well Co.
- Bankers & Brokers.**  
Alex. Brown & Sons.  
N. W. Harris & Co.  
Wilson, Colston & Co.  
Ino. L. Williams & Son.  
Middendorf, Oliver & Co.  
Southern Investment Co.  
Frederic Taylor & Co.  
P. J. Goodhart & Co.
- Barrel Machinery**  
(See Wood-Working Machinery.)
- Baths.**  
E. & B. Holmes.  
Bath Tuba.  
Haines, Jones & Cadbury Co.
- Hearings.**  
North American Metal-  
line Co.
- Bells.**  
Henry McShane & Co.
- Beitling.**  
Baker, Sloc & Sons.  
Cheapeake Belting Co.  
Providence Belting Co.  
Nashville Rapid Tann'g  
& Belt Mfg. Co.  
Gandy Belting Co.  
Chicago Rawh. Mfg. Co.  
Page Belting Co.  
Shultz Belting Co.
- Belt (Chain.)**  
F. H. C. Mey.  
Jeffrey Mfg. Co.  
Link Belt Engineer'g Co.
- Belt Holders.**  
W. R. Santley & Co.  
Blacksmiths' Tools.
- Empire Port. Forge Co.**  
Buffalo Forge Co.  
Fulton Iron & En. Wks.  
Holt Mfg. Co.
- Blinds.**  
Hartman & Durstine.  
Wm. Willer.
- Blocks (Tackle) & Sheaves.**  
Fulton Iron & En. Wks.  
Western Block Co.
- Blowers and Exhaust Fans.**  
W. R. Burgess.  
Geo. P. Clark.  
Buffalo Forge Co.  
B. F. Sturtevant.
- Boat Builders.**  
Lockwood Mfg. Co.
- Boiler Fronts and Fittings.**  
Todd Pul. & Shaft. Wks.  
Valcan Iron Works Co.
- Boilers.**  
(See also Machinery.)  
Talbot & Sons.  
Armstrong Bros.  
Cleveland & Hardwick.  
W. R. Burgess.  
Fulton Boiler Works.  
Rice & Whitacre Mfg. Co.  
W. B. Pollock & Co.  
Com. Sense Engine Co.  
Geo. Miles.  
Chattanooga Saw Wks.  
Dan Shea & Co.  
I. C. McNeil Co.  
Oil Well Sup. Co., Lim.  
Chickasaw Iron Works.  
Porter Mfg. Co., Lim.  
Atlanta Machine Wks.  
Heine Safety Boiler Co.  
Tudor Boiler Mfg. Co.  
Valk & Murdoch I. Wks.  
Ed. Kendall & Sons.  
Babcock & Wilcox Co.  
Hewes & Phillips Iron Works.  
Frick Co.  
Harrison Sfty. B'l'r. Wks.  
R. Munroe & Son.  
Rochester Machine Tool Wks.  
Sharon Boiler Wks. Lim.  
Geo. W. Tift, Sons & Co.  
Lowell Sfty. Boiler Wks.  
Taylor Mfg. Co.  
Webster, Camp & Lane Machine Co.  
E. J. Wood.
- Boiler Appliances.**  
Wm. Baragwanath & Son.  
Paul F. Hoppe.  
Warren Webster & Co.  
Locke Bros.  
Austin Adams.  
Geo. A. Barnard.  
Curtis Regulator Co.  
Reliance Gauge Co.  
Stillwell & Bierce Mfg. Co.  
Mason Regulator Co.  
Hopkes Mfg. Co.  
Boiler Compound.  
Litofuge Mfg. Co.
- Boiler Makers' Supplies.**  
New Doty Mfg. Co.  
Boiler Setting.  
Jarvis Engineering Co.
- Bolts, Rivets and Nuts.**  
Hoopes & Townsend.  
Bricks.  
Washington Hydraulic Press Brick Co.  
Brick & Clay Work-  
ing Machinery & Supplies.  
E. M. Freese & Co.  
W. R. Burgess.  
Stevenson & Co.  
J. W. Penfield & Son.  
D. J. C. Arnold.  
Frey-Sheckler Co.  
Chambers Bros. Co.  
Fletcher & Thomas.  
C. W. Raymond & Co.  
Alex. K. Rarig & Co.  
P. L. Sword & Son.  
St. Louis Iron & Mach. Works.  
Stedman's F. & M. Wks.  
Bridges.  
Pittsburgh Bridge Co.  
Potomac Bridge Works.  
Brushes.  
Ino. L. Whiting & Son.  
Business Opportu-  
nities.  
W. A. Huffman Imp. Co.  
D. H. Talbot.  
Ater & Wilkins.  
Box 96, Birmingham, Ala.  
W. S. Downton, Secty.  
Nat'l Typewriter Co.  
Murray & Stevenson.  
Chas. G. Eddy.
- Canning Mehry.**  
Cleveland Gas Mach. Co.  
Niag. Stamp'g & T'l Co.  
Warfield Mfg. Co.
- Card Clothing.**  
(See Textile Machinery and Supplies.)
- Cars.**  
(See R. R. Equipment and Supplies.)
- Castings.**  
A. Whitney & Sons.  
Knosville Car Whl. Co.  
Chester Steel Cast'g Co.  
Cast'gs (Brass, &c.)  
Thos. J. Delany & Co.  
Car Wheels.  
Knosville Car Whl. Co.  
A. Whitney & Sons.  
Russell Whl. & Found Co.  
Car Works Equip-  
ment.
- Geo. Place.**  
Saml. Woodhouse.  
Chemist.  
Ottén & Westenhoff.  
Rattle & Nye.  
J. H. Pratt.  
Stein & Schwarz.  
Clutches (Fric't'n.)  
The Moore & White Co.
- Construction Companies.**  
Coleman Gas Works  
Const. Co.  
Miller & Bierce.  
Simpkin & Hillyer.
- Contractors' Sup-  
plies.**  
Kilbourn & Jacobs Mfg. Co.  
F. C. Austin Mfg. Co.  
Ryan-McDonald Mfg. Co.  
Stuebner & Woods.
- Contracting Engi-  
neers and Machi-  
nists.**  
American Pipe Mfg. Co.  
Boughten Engineering Co.  
L. N. Cox.  
Stein & Schwarz.  
Wright & Wood.  
Nier, Hart'g & Mitchell.  
Porter Mfg. Co., Lim.  
Miller & Bierce.  
Simpkin & Hillyer.  
Jas. P. Withrow.  
E. J. Wood.
- Conveyors.**  
Webster Mfg. Co.  
F. H. C. Mey.  
F. H. Clark & Co.  
H. W. Caldwell & Son.  
McLanahan & Stone.  
The Jeffrey Mfg. Co.  
Link Belt Engineer'g Co.
- Corrugated Iron.**  
Canton Steel Roof'g Co.  
Cincinnati Corru'g. Co.  
Globe Iron Roofing & Corrugating Co.  
Holton Iron Roof'g Co.  
Kannenberg Roofing Co.  
Cambridge Roofing Co.  
Wheeling Corru'g Co.  
Cot'n Compresses.  
Campbell Cot. Com. Co.  
Miller & Bierce.  
St. Louis Iron & Mach. Works.
- Cotton Gins.**  
Talbot & Sons.  
Van Winkle Gin & Mach. Co.
- Cotton Seed Oil Machinery.**  
Chickasaw Iron Works.  
H. W. Hubbard.  
G. H. Bushnell Co.  
Van Winkle Gin & Mach. Co.  
Talbot & Sons.  
W. F. Callahan & Co.
- Cranes.**  
Valcan Iron Wks. Co.  
Detroit Fdy. Equip. Co.  
Walker Mfg. Co.
- Crushers (Corn and Cob.)**  
Com. Sense Engine Co.  
Waldron & Sprout.  
Foss Mfg. Co.
- U. S. Wind Engine & Pump Co.**  
Crushers & Break-  
ers (Ore, Rock, &c.)  
Frisbee-Lucop Mill Co.  
Totten & Hogg I. & S. Fdy. Co.  
Lloyd-Booth Co.  
Bradley Fertilizer Co.  
Gates Iron Works.  
F. H. Moore.  
James Murray & Son.  
Wiswell Electric Min-  
ing Machinery Co.  
Stedman's F. & M. Wks.  
John S. Carter.  
R. M. Johnson.  
Powell & Lockwood.  
H. McK. Wilson & Co.
- Derricks.**  
Contract Plant Mfg. Co.  
Simmerly Derrick Co.
- Dredges & Steam Shovels.**  
Copeland & Bacon.  
F. C. Austin Mfg. Co.  
Southern Equipment Co.  
Valcan Iron Works Co.  
Drills (Prospect'g)  
Diamond Prospect'g Co.  
M. C. Bullock Mfg. Co.  
Drills (Rock.)  
M. C. Bullock Mfg. Co.  
Diamond Prospect'g Co.  
Ingersoll-Sergeant Rock Drill Co.
- Drills (Wood and Metal.)**  
W. F. & Jno. Barnes Co.  
Cleveland Twist Drill Co.  
Lodge & Davis Machine Tool Co.  
Bickford Drill Co.
- Dry Kilns.**  
Standard Dry Kiln Co.  
W. R. Burgess.  
B. F. Sturtevant.
- Electric Lighting.**  
L. N. Cox.  
Belknap Motor Co.  
Brush Electric Co.  
Thomson-Houston Elec-  
tric Co.  
Schuyler Electric Co.  
Heiser Elec. Light Co.  
Southern Electrical Sup-  
ply Co.  
Edison Gen. Elect. Co.
- Electric Railway and Motors.**  
L. N. Cox.  
Thomson-Houston Elec-  
tric Co.  
N. Y. Ry. Sup. Co., Lim.  
W. L. Ladd.  
Brush Electric Light Co.
- Electrical Sup-  
plies.**  
Edison Gen. Elect. Co.  
Southern Electrical Sup-  
ply Co.
- Elevators.**  
Salem Fdy. & Mch. Shop  
James Bates.  
Jeffrey Mfg. Co.  
Morris, Williams & Co.
- Emery Wheels.**  
(See Grinding and Pol-  
ishing Machinery.)
- Engines.**  
(See also Machinery.)  
Rice & Whitacre Mfg. Co.  
Armstrong Bros.  
Estate of Geo. M. Cruickshank.  
Chattanooga Saw Wks.  
Lawrence Machine Co.  
Com. Sense Engine Co.  
W. R. Burgess.  
Lockwood Mfg. Co.  
Frank Toomey.  
Chickasaw Iron Works.  
Skinner Engine Co.  
Cleveland & Hardwick.  
Talbot & Sons.  
St. Louis Iron & Mach. Works.
- Porter Mfg. Co., Lim.**  
Chandler & Taylor.  
Oil Well Sup. Co., Lim.  
Frick Co.  
A. L. Ide & Son.  
Hewes & Phillips Iron Works.  
Valk & Murdoch I. Wks.  
W. A. Harris St. En. Co.  
Geo. W. Tift, Sons & Co.  
The J. T. Noye Mfg. Co.  
Rochester Mch. Tool Wks.  
B. W. Payne & Sons.  
Globe Machine Co.  
Gordon, Strobel & Lau-  
rence.
- Taylor Mfg. Co.**  
Valley Iron Works.  
Webster, Camp & Lane Machine Co.  
E. J. Wood.
- Engines (Gas.)**  
Charter Gas Engine Co.  
Otto Gas Engine Wks.  
Van Duzen Gas & Gaso-  
line Engine Co.
- Engines (Kero-  
sene.)**  
Rochester Machine Tool Works.
- Engravers.**  
Ryder & Dearth.
- Feed Wat'r Heater**  
Wm. Baragwanath & Son.
- Hopkes Mfg. Co.**  
Fencing.  
Manly Mfg. Co.  
Dufur & Co.  
Fred. J. Meyers Mfg. Co.  
Ludlow Saylor Wire Co.  
Fertilizer Mehry.  
Valk & Murdoch I. Wks.
- Tompkins, Oliver & Co.**  
W. D. Dunning.  
Files.  
Industry File Works.  
Reynolds Bros.  
Nicholson File Co.  
Western File Co.  
Fire Department Supplies.  
Christie & LeCount.
- Flour & Grist Mill Machinery and Supplies.**  
J. B. Allfree Co.  
Nordyke & Marmon Co.  
Talbot & Sons.  
Richmond City Mill Works.  
Cam Mfg. Co.  
Chas. E. Manor.  
B. F. Starr & Co.  
H. W. Caldwell & Son.  
Rome Foun. & Mch. Co.  
Waldron & Sprout.  
Geo. J. Fritz.
- Flue Cleaners.**  
Frontier Mfg. Co.
- Foot-Power Machinery.**  
W. F. & Jno. Barnes Co.  
H. L. Shepard.  
Sebastian-May Co.
- Forge Pumps.**  
Mast, Foss & Co.  
F. E. Myers & Bro.
- Forges.**  
Buffalo Forge Co.  
B. F. Sturtevant.  
Miner & Peck Mfg. Co.  
Bradley & Co.  
Empire Port. Forge Co.  
Foundry Mehry.  
Detroit Fdy. Equip. Co.  
Victor Colliery  
Byram & Co.  
Allentown F. & Mch. Co.  
Knoxville Car Whl. Co.  
Jas. P. Withrow.
- Friction Cones.**  
Evans Frict'n Cone Co.  
Furnace Builders.  
Gordon, Strobel & Lau-  
rence.  
Jas. P. Withrow.  
Stein & Schwarz.
- Furnace for Boilers.**  
Foundry & Mch. Depart.  
Harris'g Car Mfg. Co.  
Jarvis Engineering Co.
- Furnace Supplies.**  
Byram & Co.  
Lowe & Tucker.
- Gas Machines and Appliances.**  
Cleveland Gas Mch. Co.  
Coleman Gas Works  
Const. Co.  
Detroit Heat'g & Light-  
ing Co.  
American Gas Sav'g Co.  
Penna. Globe Gas Light Co.
- Gauge Glass.**  
Pancoast & Maule.
- Grain Elevator Supplies.**  
H. W. Caldwell & Son.  
Grate Bars.  
N. E. Roller Grate Co.  
Grinding and Pol-  
ishing Mehry.  
Springfield Em'y Wheel Mfg. Co.  
Waltham Emery Wl. Co.  
Northampton Emery Wheel Co.  
Norton Emery Wheel Co.  
Hammer (Steam and Power).  
Long & Allattier Co.  
Belden Machine Co.  
Bradley & Co.  
Knoxville Car Whl. Co.
- Handle Mehry.**  
(See Wood-working Machinery.)
- Hardware Spec-  
ialties.**  
American Screw Co.  
Belden Mch. Co.  
Heesen Bros. & Co.  
Empire Port. Forge Co.  
Fred. J. Meyers Mfg. Co.  
Van Wagoner & Wil-  
liams Co.  
Cronk Hanger Co.  
Wier & Wilson.  
Covert Mfg. Co.
- Hay Tools.**  
F. E. Myers & Bro.  
U. S. Wind Engine & Pump Co.
- Heating Appa-  
ratus.**  
W. R. Burgess.  
Pierce, Butler & Pierce Mfg. Co.  
Detroit Heat'g & Light-  
ing Co.  
D. F. Morgan Boiler Co.  
B. F. Sturtevant.
- Hoisting Ma-  
chinery.**  
Rice & Whitacre Mfg. Co.  
Ino. F. Byers.  
Morris Co. Mch. Co.  
M. C. Bullock Mfg. Co.  
Contractors' Plt. Mfg. Co.  
Copeland & Bacon.  
Ed. Kendall & Sons.  
Diamond Prospect. Co.  
Knoxville Car Whl. Co.  
Valcan Iron Works Co.  
Ryan-McDonald Mfg. Co.  
Webster, Camp & Lane Machine Co.
- Chain Hoist.**  
E. Harrington, Son & Co.  
Rope Hoist.  
Fulton Iron & En. Wks.  
Palmer, Cunningham & Co., Limited.
- Hose.**  
Christie & LeCount.  
Waterbury Rubber Co.  
Hydrants.  
Ludlow Valve Mfg. Co.  
Hydraulic Ma-  
chinery.  
Watson & Stillman.
- Ice-Making Ma-  
chinery.**  
Atlanta Machine Wks.  
Castle Engine Works.  
Consolid'd Ice Mch. Co.  
Ring Ref. & Ice Mch. Co.  
Hercules Iron Works.  
Richmond Ice Mch. Co.  
Fred W. Wolf Co.  
Sulzer-Vogt Mch. Co.  
Frick Co.  
Arctic Ice Mch. Mfg. Co.  
Injectors.  
Forest City Brass Wks.  
Sherwood Mfg. Co.
- Insulated Wires & Cables.**  
South. Elec. Supply Co.
- Insurance.**  
Employers' Liab'ty As-  
surance Corp'n, Lim.  
Hartford St. Boiler Insp.  
and Insurance Co.
- Iron Working Machinery.**  
Stow Flex. Shaft Co. Lim.  
E. Harrington, Son & Co.  
Lodge & Davis Machine Tool Co.  
Lathe & Morse Tool Co.  
Globe Machine Co.
- Jacks.**  
Joyce, Cridland & Co.  
Riehle Bros.
- Jacks (Hydraulic)**  
Watson & Stillman.
- Knitting Ma-  
chinery.**  
Nye & Treddick.
- Laundry Ma-  
chinery.**  
Geo. J. Fritz.  
Troy Laundry Machin-  
ery Co., Limited.  
The A. M. Dolph Co.
- Lights (Factory and Outdoor).**  
Schneider & Trenkamp Mfg. Co.
- Keegan & Halpin.**  
Industrial Light Co.  
Penn. Globe Gas Lt. Co.
- Locomotives.**  
(See also R. R. Equip'm't and Supplies.)  
Chickasaw Iron Works.  
Richmond Loc. & Mch. Wks.  
H. K. Porter & Co.  
Baldwin Loco. Works.
- Lubricants.**  
Olney Bros.  
Wm. C. Robinson & Son Co.
- Lumber.**  
E. B. Hunting & Co.  
Johnson, Shryock & Co.  
Thos. J. Shryock & Co.
- Machinery.**  
Allentown F. & Mch. Co.  
W. D. Dunning.  
G. H. Bushnell Co.  
Box 110, Cleveland, O.  
Miner & Peck Mfg. Co.  
Nicholson & Waterman Mfg. Co.  
Lawrence Machine Co.  
Christians Mch. Co.  
Thaddeus S. Cobb & Co.  
St. Louis Iron & Mach. Works.  
Webster Mfg. Co.  
Southern Equip'm't Co.  
M. C. Bullock Mfg. Co.  
Knoxville Car Whl. Co.  
Rome Fdy. & Mch. Wks.  
Birdsall Co.  
S. C. Forsaith Mch. Co.  
R. M. Johnson.  
Warfield Mfg. Co.  
F. A. Estep.  
Stow Flexible Shaft Co., Limited.  
Found. & Mch. Depart.  
of Harris'g Car Mfg. Co.  
Morris Machine Wks.  
Richmond Loc. & Mch. Wks.  
Alex. K. Rarig & Co.  
Lowell Stm. Boiler Wks.  
S. Morgan Smith.  
McLanahan & Stone.  
Valcan Iron Works Co.
- Machinery & Tools (Second Hand.)**  
J. A. Machinist Depot  
N. Y. Machinery Depot  
Prentiss Tool & Sup. Co.  
L. F. Seyfert.  
S. C. Forsaith Mch. Co.  
Lowell Stm. Boil. Wks.  
G. H. Scanlan & Co.  
Metal Wheels.  
Howell Wheel Co.
- Mill Engineers.**  
Gray & Fitch.  
Raeder, Coffin & Crocker  
Lockwood, Greene & Co.  
C. R. Makepeace & Co.  
Drew, Baldwin & Co.  
Mill Stones.  
B. F. Starr & Co.
- Mill Supplies.**  
Talbot & Sons.  
Christie & LeCount.  
Waters & Garland.  
Milner & Kettig.  
James Smith & Co.
- Mining, Quarry-  
ing & Stone-Cut-  
ting Mehry.**  
Steam Stone Cutter Co.  
Allentown F. & Mch. Co.  
Atlanta Machine Wks.
- Ingersoll-Sergeant Rock Drill Co.**  
Morris Co. Mch. Co.  
Gates Iron Works.  
Diamond Prospect'g Co.  
St. Louis Iron & Mach. Works.  
Wiswell Electric Mini'g Machinery Co.  
M. C. Bullock Mfg. Co.  
Copeland & Bacon.  
Jeffrey Mfg. Co.  
Webster, Camp & Lane Machine Co.  
Lincoln Iron Works.
- Miscellaneous.**  
Auto. Time Stamp Co.  
Corroation Book Co.  
H. H. Babcock, Treas.  
Hollis Spring Co.  
H. V. & H. W. Poor.  
Ino. G. Mengel & Co.  
Smith Prem'g Type Co.  
Nat. Typewriter Co.  
R. M. Whitney.  
Chamberlin Mfg. Co.  
Jory & Co.  
A. B. Colten.  
Frederick H. Smith.  
S. E. Crawford.  
Cleveland Axle Mfg. Co.  
Pickands, Mather & Co.  
Terry Mfg. Co.  
American Pig Iron Stor-  
age Warehouse.  
Phila. Warehouse Co.  
Eastman & Co.  
Ryder & Dearth.  
C. A. Gambrill Mfg. Co.  
The Bradstreet Co.  
Ligowsky Clay Pig'n Co.  
Bernhardt Diets.  
Budden & Sons.  
John Ryan Co.  
Ault & Wiborg.  
Record Printing House.  
Stillman, (Cleveland.)  
Niagara, (Buffalo.)  
Hotel Lucerne, (Salem.)
- Office Furniture.**  
Derby & Kilmer Dk. Co.  
Terry Mfg. Co.
- Oil Cups.**  
Lunkenheimer Brass Mfg. Co.  
Sherwood Mfg. Co.
- Oils.**  
Olney Bros.  
Wm. C. Robinson & Son Co.
- Oil Burners.**  
Stickney Oil Burner Co.
- Ore Washers.**  
McLanahan & Stone.
- Packing.**  
Garlock Packing Co.  
James Smith & Co.  
Shields & Brown Co.  
Page Belting Co.  
Jenkins Bros.
- Paint.**  
A. F. Bouton & Co.  
H. W. Johns Mfg. Co.  
Iron Clad Paint Co.  
Nubian Iron Enamel Co.  
Jos. Dixon Crucible Co.  
Chattanooga Paint Co.  
N. T. Pate & Co.
- Paper and Pulp Mill Machinery.**  
The Moore & White Co.  
F. H. Davis & Co.  
Dayton Globe Iron Works Co.
- Perforated Metal.**  
Harrington & Kling Per-  
forating Co.
- Phosphor Bronze.**  
Phosphor Bronze Smelt Co.
- Pig Iron.**  
Lowe & Tucker.  
Pickands, Mather & Co.
- Pile Drivers.**  
Valcan Iron Works.
- Pipe (Cast Iron and Steel).**  
American Pipe Mfg. Co.  
Annisson Pipe Works.  
The Glamorgan Co.  
Jackson & Woodin Mfg. Co.
- Wells Rustless Iron Co.**  
Spiral Weld Tube Co.  
Chattanooga Foundry and Pipe Works.  
Pipe Bend'g Wks.  
Jas. D. Cardell & Co.  
The Conovering.  
Shields & Brown Co.
- Pipe Handling Tools.**  
Graham Bailey & Co.  
Pancoast & Maule.  
D. Saunders' Sons.  
Pipe Fittings.  
Pancoast & Maule.
- Plumbers' Sup-  
plies & Tools.**  
Stewart Ceramic Co.  
Graham, Bailey & Co.  
Locke Bros.  
Schneider & Trenkamp Mfg. Co.  
Stickney Oil Burner Co.  
Milner & Kettig.  
Haines, Jones & Cad-  
bury Co.  
Pancoast & Maule.  
D. Saunders' Sons.  
Presses (Power).  
Lockwood Mfg. Co.  
Miner & Peck Mfg. Co.  
Boomer & Boschert Press Co.
- Pulleys, Shafting and Hangers.**  
F. Prybil.  
Dayton Globe Iron Works Co.  
Atlanta Machine Wks.  
Todd Pul. & Shaft. Wks.  
W. R. Burgess.  
Webster Mfg. Co.  
Van Winkle Gin & Mach. Co.
- Fitzsimons & Co.**  
Ohio Pulley & Mach. Co.  
Menasha Wood Split Pulley Co.  
Warfield Mfg. Co.  
Taper-Sleeve Pul. Wks.  
James Smith & Co.  
Chat. W'd Split Pul. Co.  
Webster, Camp & Lane Machine Co.  
E. J. Wood.
- Pulley Covering.**  
Nat. Pul'y Covering Co.  
Pumps (Hand and Power.)  
Gould Mfg. Co.  
Deming Co.  
Van Winkle Gin & Mach. Co.  
U. S. Wind Engine & Pump Co.
- Pumps (Steam.)**  
Eclipse Pump Mfg. Co.  
Lawrence Machine Co.  
Barr Pump'g Engine Co.  
Van Duzen & Tift.  
Cook Well Co.  
Deane S. P. Co.  
Goulds Mfg. Co.  
John Maslin & Son.  
Hy. R. Worthington.  
Hughes Steam Pump Co.  
Pulsometer Stm. P. Co.  
Valley Pump Co.  
Dean Bros. Stm. P. Wks.  
Blakeslee Mfg. Co.  
Laidlaw & Dunn Co.  
Geo. F. Blake Mfg. Co.  
Irvin Van Wic.  
The A. S. Cameron Stm. Pump Works.  
Jno. H. McGowan & Co.  
The Smith & Valle Co.  
Buffalo Stm. Pump Co.  
Rumsey & Co., (Lim.)  
Boggs & Clarke.
- Punching and Shearing Mehry.**  
New Doty Mfg. Co.  
Long & Allattier Co.
- Railroads.**  
Cleveland & Canton R. R.  
Pittsburgh & L. E. R. R.  
M. & St. P. R. R.  
Piedmont Air Line  
Old Kentucky Route.  
Shenandoah Valley R. R.  
Western Md. R. R.  
Ham. & Dayton Rd.  
E. Ten. Vir. & Georgia  
Wheeling & L. Erie Ry.  
Valley Railway.
- Railroad Equip'm't and Supplies.**  
(New & Second Hand)  
Corey Car & Mfg. Co.  
Jackson & Woodin Mfg. Co.  
N. Y. Ry. Sup. Co., Lim.  
Benj. Watson.  
Dyott & Co.  
R. T. White.  
Robinson & Orr.  
Humphreys & Sayce.  
N. Y. Equipment Co.  
Carlisle Mfg. Co.  
Richmond Loc. & Mch. Wks.
- Wks.**  
H. K. Porter & Co.  
Penna. Steel Co.  
Baldwin Locomo. Wks.  
Wm. Miningerode.  
Alfred W. Ladd.  
F. A. Estep.  
Lowe & Tucker.  
Russell W'l'g & Fdy Co.  
Reginald Canning & Co.  
A. S. Males & Co.
- Real Estate.**  
(See also Towns.)  
Boude, Pendleton.  
Meem & Co.  
H. M. Loomer & Co.  
F. I. Chapman.  
Real Estate Invest. Co.  
Ino. C. Field.  
Standard Land Co.  
Southland Invest'm't Co.  
R. K. Wright, Jr.  
Munson & Bro.  
Edmonds & Robinson.  
"War" Robertson.
- Road Machinery.**  
F. C. Austin Mfg. Co.  
Fondry & Mch. Depart.  
of Harris'g Car Mfg. Co.
- Roll'g Mill Machinery.**  
Lloyd-Booth Co.  
Totten & Hogg I. & S. Fdy. Co.
- Roofing.**  
Asphaltic Slag Paving & Roofing Co.  
H. W. Johns Mfg. Co.  
Globe Iron Rfg. & C. Co.  
Cincinnati Corru'g. Co.  
Ehret-Warren Metal Co.  
Heberling Metal Roof-  
ing Co.  
Empire Paint & Rfg. Co.  
Canton Steel Roof'g Co.  
W. J. Burton & Co.  
Cortright Met. Roof. Co.  
Sykes Iron Roofing Co.  
Kannenberg Roofing Co.  
Holton Iron Roofing Co.  
Cambridge Roofing Co.  
The Berger Mfg. Co.  
Lowe & Tucker.  
Merchant & Co.  
Wheeling Corru'g Co.
- Rubber Goods.**  
Waterbury Rubber Co.
- Rustless Iron.**  
Wells Rustless Iron Co.
- Saws.**  
(See also Woodworking Machinery.)  
Wheeler, Madden & Clemson Mfg. Co.  
W. F. & John Barnes Co.  
Chattanooga Saw Wks.  
Peter Gerlach & Co.  
Saw Mill Machinery  
W. E. Hill & Co.
- Chattanooga Saw Wks.**  
W. R. Burgess.  
Manly Mfg. Co.  
E. S. Abbott.  
G. H. Scanlan & Co.  
Chickasaw Iron Works.  
Frick Co.  
Richmond Mch. Wks.  
A. C. Powell & Son.  
Taylor Mfg. Co.  
Scales.  
Buffalo Scale Co.  
Jones of Birmingham.  
Riehle Bros.
- Screws, Taps, &c.**  
Cincinnati Screw & Tap Co.  
Scroff Sawas.  
H. L. Beach.  
W. F. & John Barnes Co.
- Sewerage Con-  
tractors.**  
Nat'l Sewerage & Sew-  
age Utilization Co.  
Sheet Metal Work-  
ing Machinery.  
Niagara Stamping and Tool Co.
- Shingle and Stave Machinery.**  
(See Woodworking Machinery.)
- W. E. Hill & Co.**  
Skylights.  
E. Van Noorden & Co.  
Lays & Young.
- Soup-makers' and Butchers' Mehry.**  
H. Wm. Dopp & Son.  
A. W. Houchin.
- Stand-Pipe.**  
J. C. McNeil Co.  
Sharon Boiler Wks. Lim.  
Porter Mfg. Co., Lim.
- Steamers.**  
Bay Line Steamers.  
Balto. Stor. & Light Co.  
Goodrich Transpor. Co.
- Steam Separator.**  
Geo. A. Barnard.  
Curtis Regulator Co.  
Steel.
- Chas. Burgess.**
- Steel Rails.**  
(See also R. R. Equip'm't and Supplies.)  
Penna. Steel Co.  
Benj. Watson.  
Testing Machines  
Riehle Bros.
- Textile Machinery and Supplies.**  
Schaum & Uhlinger.  
Thaddeus S. Cobb & Co.  
Providence Belting Co.  
James Smith & Co.  
Stoddard, Lovering & Co.  
Nye & Treddick.  
American Supply Co.  
Jeremiah Clark.  
Crompton Loom Wks.  
Globe Machine Works.  
Geo. Draper & Sons.  
Whitinsville Spinning Ring Co.  
Geo. F. Clark.
- Textile Machinery (Second Hand.)**  
C. R. English.  
Thaddeus S. Cobb & Co.  
L. Godwin & Co.
- Tires.**  
Standard Steel Works.
- Tools (Machine & Hand.)**  
Cincinnati Screw & Tap Co.  
Belden Mch. Co.  
Nicholson & Waterman Mfg. Co.  
J. Stevens Arms & T'l Co.  
Stow Flexible Shaft Co.  
D. E. Whiton Mch. Co.  
Cleveland Tw. Drill Co.  
Lathe & Morse Tool Co.  
E. Harrington, Son & Co.  
Lodge & Davis Machine Tool Co.
- Towns.**  
Bluffton, Ala.  
Big Stone Gap, Va.  
Bedford City, Va.  
Harriman, Tenn.  
Front Royal and River-  
ton, Va.  
Laredo, Texas.  
Shenandoah, Va.  
Cheraw, S. C.  
Shennum, Va.  
Luray, Va.  
Buena Vista, Va.  
Kimball, Tenn.  
Tacoma, Va.  
Tredegar, Ala.  
Cardiff, Tenn.  
Dallas, Texas.  
Rockwood, Tenn.  
Sheffield, Ala.  
Beasemer, Ala.  
Salem, Va.  
Denison, Tex.  
Middlesborough, Ky.
- Trucks.**  
Chickasaw Iron Works.
- Valves.**  
Locke Bros.  
Curtis Regulator Co.  
Lunkenheimer Brass Mfg. Co.  
Mason Regulator Co.  
Jenkins Bros.  
Ludlow Valve Mfg. Co.
- Veneer Cutting Machines.**  
(See Woodworking Machinery.)

(Continued on Page 75)



# CARD CLOTHING. JAMES SMITH & CO. Woolen Machinery.

PHILADELPHIA, Manufacturers of PENNSYLVANIA.



## Milling Outfits for Flour and Meal.

WE MAKE ROLLS AND PORTABLE MILLS COMPLETE.  
 Manufacture Established in 1854. Pamphlets with Prices Mailed Free.



NORDYKE & MARMON CO., INDIANAPOLIS, IND.

## ELEVATORS

## MORSE ELEVATOR WORKS. MORSE, WILLIAMS & CO.

Manufacturers and Builders of HYDRAULIC STEAM, BELT and HAND-POWER PASSENGER and FREIGHT ELEVATORS. With most approved Safety Devices. Successors to GLEN & MORSE. Jumb-Walters, Automatic Hatch-Doors, &c.

Office, 1105 FRANKFORT AVE.; Works, FRANKFORT AVE., WILDEY AND SHACKAMAKON STREET, PHILADELPHIA, PA.  
 Branch Office, 108 Liberty St., New York. MORTON, REED & CO., 3 & 5 German St., Agents for Baltimore. Boston Office, 14 High St.



## MINING, TUNNELING AND QUARRYING MACHINERY.

The New Ingersoll-Sergeant Air Compressors.

## GADDERS, ROCK DRILLS, QUARRY BARS.

STONE CHANNELING MACHINES. COAL MINING MACHINES.

Send for complete priced catalogue of Mining, Tunneling and Quarrying Machinery.

INGERSOLL-SERGEANT ROCK DRILL CO., 10 Park Place, New York.



## Southern Electrical Supply Co. OKONITE WIRES, TAPE and TUBING.

CANDEE WEATHER-PROOF LINE WIRE AND MANSON TAPE. ELECTRICAL GOODS OF EVERY DESCRIPTION.

Write for Quotations.

823 Locust Street, St. Louis, Mo.

## THE STANDARD IMPROVED DRY KILN



Is the Best Lumber and Shingle Dryer in the Market.  
 The STANDARD "HOT BLAST" APPARATUS, for Heating and Ventilating Public Buildings, Factories, &c., is Unexcelled.

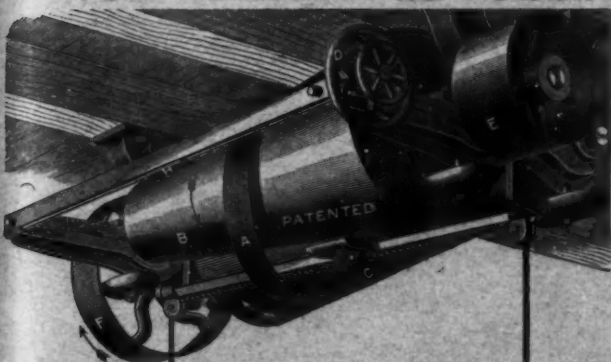
Send for catalogue containing numerous testimonials. Estimates and plans furnished on application.

The Standard Dry Kiln Co.

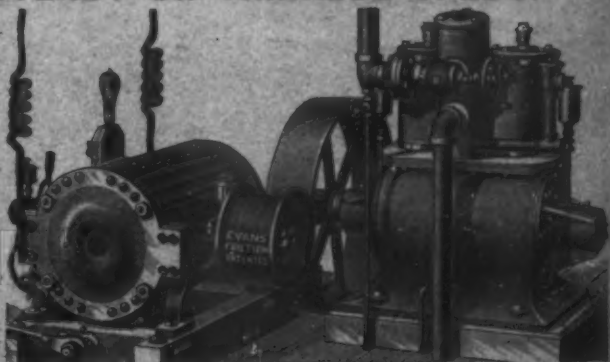
PATENTERS AND SOLE MANUFACTURERS, 1224 to 1230 West Main Street, LOUISVILLE, KY.

## THE EVANS SYSTEM OF FRICTION

FOR TRANSMITTING POWER WITH EITHER STEADY OR VARIABLE SPEED.



WE GUARANTEE  
 GREATER  
 EFFICIENCY  
 THAN WITH  
 ORDINARY BELTS.



By the use of our Friction Cones the speed of any machine may be varied automatically or by hand while the machine is running, and the machine can be started and stopped without the use of loose pulleys.

The above cut represents a dynamo being driven from a Westinghouse engine by our system. Advantages: Room Saved! Power Saved! Belting Saved! Each dynamo may be started or stopped without the use of clutch pulley, and without slowing the engine, by simply turning a hand wheel.

We refer you to Plants which we have in Successful Operation.

EVANS FRICTION CONE CO., 85 Water Street. BOSTON.

STEEL RAILS, (ALL WEIGHTS) FIG IRON, IRON ORE, SCRAP.

## ROBINSON & ORR

Steel Rails and Fastenings.

419 Wood St., PITTSBURGH, PA.

WE BUY OLD IRON AND STEEL RAILS, (for reworking or relaying) WRITE US.

BUFFALO SCALE CO., Buffalo, N. Y. Headquarters for RAILROAD TRACK SCALES and all other Scales.



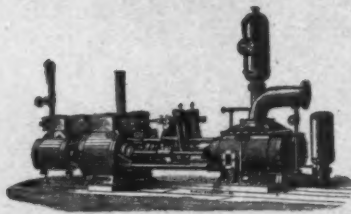
# THE DEANE STEAM PUMP COMPANY,

## HOLYOKE, MASS.

BUILD  
STEAM • PUMPING • MACHINERY

OF EVERY VARIETY.

Send for New Catalogue.



NEW YORK, BOSTON,  
CHICAGO, PHILADELPHIA, ST. LOUIS.  
MAKE A SPECIALTY OF  
**Water Works ENGINES**

FOR THE SUPPLY OF CITIES AND TOWNS.  
Birmingham Office and Warerooms: No. 6 SOUTH 20th STREET.

# WORTHINGTON STEAM PUMPS

SOUTHERN SELLING AGENTS:

THOS. C. BASSHAW & CO., Baltimore, Md.  
KENTUCKY MACHINERY CO., Louisville, Ky.  
PERRY MACHINE WORKS, Nashville, Tenn.  
LIVERMORE FDRY. & MACH. CO., Memphis, Tenn.  
FORSBERG & MURRAY, Washington, D. C.

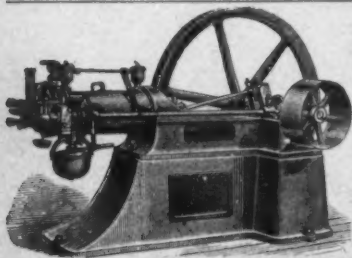
SEND FOR ILLUSTRATED CATALOGUE

**HENRY R. WORTHINGTON**  
NEW YORK.

SOUTHERN SELLING AGENTS:

SMITH & COURTNEY, Richmond, Va.  
MECKLENBURG IRON WORKS, Charlotte, N. C.  
E. V. WHITE & CO., Norfolk, Va.  
M. SCHWARTZ & CO., New Orleans, La.  
F. W. HEITMANN & CO., Houston, Texas.

**Boston Philadelphia Chicago St. Louis St. Paul San Francisco**



Over 18,000 in use. **OTTO GAS ENGINE**

20 to 70 per ct. less Gas Consumption than ANY OTHER ENGINE.

Working Without Boiler, Steam, Coal, Ashes or Attendance.

Started Instantly by a Match It gives full power immediately. When Stopped all Expense Ceases.

GUARANTEED TO CONSUME 25 TO 75 PER CENT. LESS GAS THAN ANY OTHER GAS ENGINE DOING THE SAME WORK.

No explosions, no fires nor cinders, no gauges, no pumps, no engineer or other attendant while running. Recommended by Insurance companies. UN SURPASSED IN EVERY RESPECT for hoisting in warehouses, printing, ventilating, running small shops, &c. Sizes, 1 to 25 Horse-Power.

Branch Office, 151 Monroe St., Chicago, Ill. **OTTO GAS ENGINE WORKS, Schleicher, Schumm & Co.** 33D AND WALNUT STS. PHILADELPHIA, PA.

**GEO. DRAPER & SONS, of Hopedale, Mass.**

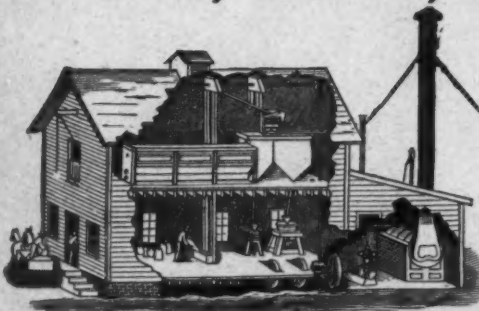
SELL THE

**Highest Grade of Twistors, Warpors and Spoolers.**

SOUTHERN AS WELL AS NORTHERN MILLS REQUIRE THE HIGHEST GRADE.

THEY ARE CONSTANTLY INTRODUCING IMPROVEMENTS IN ALL LINES OF COTTON MACHINERY.

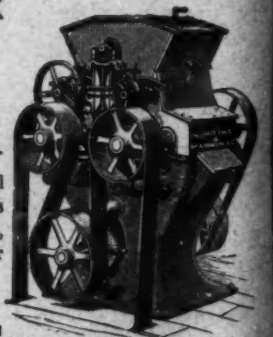
# FLOUR, CORN, PORTABLE AND ROLLER MILLS



COMPLETE ALL SIZES.

We guarantee Highest Product in our Custom or Merchant Mills, which we will contract to build complete—over 1,000 have been equipped by us. Our Portable Mills have been awarded Highest Prizes at Exposition Fairs. French Buhr Grist Mills, over 3,000 in use, complete with sheller, \$115. Correspondence solicited. Write for pamphlet. "Mills and Milling" sent free.

**NORDYKE & MARMON CO., Indianapolis, Ind.**



For SUCTION, WATER, STEAM, GAS, AIR, ACIDS and for every purpose to which a Hose can be applied.  
**SPHINCTER GRIP**  
ARMORED PAT. 1882, '85, '86, '88.  
RESISTANCE to Great Pressure; Unobstructed Flow of Water; Increased Flexibility and Perfect Protection are some of its Advantages.  
WE GUARANTEE every foot sold to withstand constant service for such longer period as to render its actual cost much less in the end. Every wind of the wire can be cut without loosening or uncoiling.

The making, vending or use of any SERVICEABLE ARMORED WIRE-BOUND HOSE not of our manufacture is an infringement on one or more of our patents, and any violation will meet with instant prosecution. Brass plates mark each coil and admonish infringers, whether evil-minded or ignorant.

**WATERBURY RUBBER COMPANY,**

Sole Manufacturers and Proprietors,

49 WARREN STREET, NEW YORK.

# THE EMPLOYERS' LIABILITY ASSURANCE CORPORATION, Limited, OF LONDON, ENGLAND.



Trustees for the United States:

OLIVER W. PEABODY, Esq., KIDDER, PEABODY & Co., Boston.  
CHAUNCEY M. DEPEW, Esq., Pres. N. Y. Cen. and H. R. R. Co., New York.  
SAMUEL SLOAN, Esq., Pres. Del., Lacka. and West. R. R. Co., New York.  
WM. A. FRENCH, Esq., Pres. Mass. National Bank  
ABRAHAM FRENCH CO., Boston.  
HON. JOHN LOWELL, Boston.

Deposited in United States,

\$700,000.00.

Policies issued giving full protection to Employers against loss by Claims from Employees on account of Accident. Rates Proportioned to Risks of Occupation. One Premium the only Payment during year. No Contingent or other Liability on part of Employer.

Employers with Pay Rolls of \$103,000,000 already covered in United States. No Employer should be without this Protection. Cases Investigated by Competent Inspectors and considered by Eminent Counsel. If liability shown, Claims settled without litigation.

ENDICOTT & MACOMBER, Managers for the United States, 71 KILBY STREET, BOSTON.

AGENTS—SAMUEL APPLETON, 28 Central St., Boston; KIRBY & DWIGHT, 51 Cedar St., New York; MIDDLE DEPARTMENT, TATTNALL PAULDING, Mgr., 416 and 420 Walnut St., Philadelphia; G. W. S. HALL, 413 Second St., Baltimore, Md.; GEO. A. GILBERT, 225-228 LaSalle St., Chicago; F. D. HIRSHBERG & BRO., 120 N. Third St., St. Louis; HUFFMAN & ALLISON, State Agents for Alabama and Tennessee, Birmingham, Ala.

Send for New Catalogue **SUPERIOR WOOD-WORKING MACHINERY** to **CONNELL & DENGLE, Rochester, N. Y.**



Y,

DUIS,

IES

STREET.

PS

NTS:

to, W. C.

since

ess Gen  
than  
GINE.

enses.

K.

ies. UN-

ower.

IT STS.

, PA.

ers.

Y.



OUND  
iolation  
whether

Y,

RK.

ed,

000,000  
mployer  
Inves-  
sidered  
Claims

N.

elphia:

N.Y.







# MANUFACTURERS' RECORD

A Southern Industrial, Railroad and Financial Newspaper.

VOL. XVIII. No. 6.  
WEEKLY.

BALTIMORE, SEPTEMBER 13, 1890.

\$4.00 A YEAR.  
SINGLE COPIES, 10 CENTS.

## Manufacturers' Record.

PUBLISHED EVERY SATURDAY BY THE

MANUFACTURERS' RECORD CO.

President, Secretary and Treasurer,  
EDWARD H. EDMONDS. WM. H. EDMONDS.

RICHARD H. EDMONDS, EDITOR.  
WM. H. EDMONDS, BUSINESS MANAGER.

THOMAS P. GRASTY, Southern Staff Correspondent.

OFFICE:  
COR. EXCHANGE PLACE AND COMMERCE STREET,  
BALTIMORE.

SUBSCRIPTION, . . . . \$4.00 a Year.  
To Foreign Countries, . . . 6.50 a Year.

BALTIMORE, SEPTEMBER 13, 1890.

LONDON ENGINEERING, a leading British industrial newspaper, speaking of the coming visit to America of 300 European members of the Iron and Steel Institute, says:

On Tuesday, October 14, the party will divide into two bodies, which will proceed North and South, respectively. It will be a somewhat difficult matter to many to make the choice. On the one hand there will be the beauty of the lakes and the won'ers of Niagara, rendered still more charming by the advent of the Indian summer, while on the other hand there will be the iron and coal fields of the Southern States, which present such tempting outlets for capital. Many a man desirous to find openings for his children will choose the latter trip in order to decide whether they cannot do better in the new world than the old. Even those who have not such responsibilities may go in search of investments which will pay better interest than ventures of the same kind in England.

THAT the interest in Southern development shown by the capitalists and iron and steel men of Europe has extended to the crowned heads is indicated by the following from the Baltimore Evening News:

Mr. R. H. Edmonds, editor of the MANUFACTURERS' RECORD, of this city, has just received a letter from the King of Belgium thanking him for a copy of a pamphlet recently published by Mr. Edmonds, setting forth the wonderful growth of the South, especially in the production of iron and steel, a subject in which the King takes great interest. King Leopold is a close student of metallurgical matters and watches with much interest the rapid growth of the world's iron and steel trade, in which the South is now taking such a prominent part.

### The Mississippi River.

At a meeting of the executive committee of the Interstate Mississippi River Improvement & Levee Association, held at Memphis, Tenn., September 2, resolutions were adopted expressing appreciation of the MANUFACTURERS' RECORD's work in behalf of Mississippi river improvement, and endorsing our efforts in that direction. Coming, as they do, from a committee composed of leading men, representing the interests of the great valley, this resolution is something any newspaper might be proud of.

At the same meeting the committee took steps to secure the aid of the levee boards of the various States in keeping up the organization, which grew out of the convention held at Vicksburg last spring. It is important that this organization be maintained and sustained. It will be a powerful instrumentality in accelerating Congressional action, and in bringing that action up to a point commensurate with the importance of river improvement.

The matter of conventions was also discussed by the committee. The MANUFACTURERS' RECORD is decidedly in favor of the proposed convention at Washington. It will bring to the national capital a great assemblage of prominent men from the valleys of the Mississippi and its tributaries, and the discussion of this great question in all its phases will throw light where light is most needed, in the halls of Congress. Washington is the center of political influence. It is the place where adequate and permanent river improvement must be provided for. By all means, therefore, let the convention which the executive committee now has in contemplation be held in Washington.

Aside from this direct pressure of enlightenment and influence which may be brought to bear on the lawmakers at Washington, no efforts should be relaxed in spreading information and working up interest from one end of the country to the

other. Once understood by the people who are really and directly interested, the needs of this great national drain and artery of commerce would not long be slighted.

### A Bright Future for Roanoke and Salem.

Roanoke and Salem have often been compared to Minneapolis and St. Paul, and in some respects there is a striking similarity, but we believe that the growth of these two Virginia towns will far surpass the rate of growth made by the two great commercial cities of Minnesota. In proportion as the resources of Virginia exceed the resources of Minnesota, and the difference is very great, will the progress of Salem and Roanoke exceed that of St. Paul and Minneapolis. These two Virginia towns that so thoroughly typify the wonderful energy of the awakened South, surrounded by a country of unbounded mineral wealth and by an agricultural region that has no superior, are growing with amazing rapidity, but they are hardly well started yet. Their future is exceedingly bright. Only about 6 miles apart, they are steadily growing toward each other, and the time is not far distant when they will practically be one city, the great industrial and financial center of Southwest Virginia, holding to all that region the same position Chattanooga does to the territory surrounding it, or that Birmingham does to what is called the "Birmingham Iron District," in which there are about 30 large furnaces. The progress of these two towns, as great as it has been in the past, will be much greater in the future. Their prosperity means the prosperity of all Southwest Virginia, and the MANUFACTURERS' RECORD rejoices to know that the outlook for their future is so promising. Many plans are being matured, so we have learned confidentially, for great enterprises that will involve the expenditure of some millions of dollars and the employment of many thousands of mechanics at these places.

### How Some Southern Marshes Could Be Utilized Profitably.

The failure of many kinds of fruit this year has called attention to the value of the cranberry crop. The estimate has been made by experts that the cranberry bogs of Southern New Jersey will this season be worth at least \$1,000,000 to their owners. The business of cultivating and marketing this berry is of such importance that some years since an organization to promote this interest was formed called the American Association of Cranberry Growers.

September is the month for harvesting this favorite berry, which must be gathered as soon as ripe. This, like the hop crop, gives employment for the time being to an army of pickers, crate makers and carters and large business to the railroads. There are other districts in New York, New England and Wisconsin where this fruit is extensively cultivated, and in good years is a source of great profit. Most of these bogs are owned by small farmers who cultivate from 5 to 15 acres, with an annual average yield of about 200 bushels per acre. The New Jersey berries seldom sell at less than \$5 a bushel, and have occasionally brought much higher prices.

A story is going the rounds that a wealthy syndicate has been trying to secure enough of these bogs to give them a monopoly of the production, but this is probably chimerical, for it would be much easier to get control of an entire crop than of the multitude of small farms on which it was produced.

There are large areas along the South Atlantic coast where the wild cranberry flourishes, notably so among the marsh lands of the western shores of the North Carolina sounds. If these were cultivated as assiduously as those of New Jersey and Cape Cod, large areas, now of little or no value, would yield immense and very profitable crops. Why this was not done long ago is one of the inexplicable features of the teeming natural resources of the South.

### Financial Condition of the South.

The financial condition of the counties of the United States for the year 1890 is set forth in Census Bulletin No. 6, it being a preliminary report of the bonded, floating, gross and net debt and annual interest charge of nearly every county in our States and Territories, as also of their sinking funds, cash in treasury and other available assets. This is accompanied by symbolic maps that illustrate the geographical distribution of county debts and of available resources. These tables of statistics are arranged in groups, to which the maps correspond, the combination making a valuable compendium of financial statistics, convenient for reference and easily understood. The maps show that while there are many counties that have no indebtedness whatever, and many more in which the amounts are so small as to be scarcely worth noting, there are others that are heavily burdened. The following table gives the statistics of the several groups:

Number of States.	Group.	Number of counties.	Gross debts.	Total available resources.	Net debts.	Annual interest.
5	New England States <sup>a</sup>	67	5,033,577	5,164,486	4,487,491	189,769
3	Middle	175	25,369,185	4,919,747	21,349,438	1,106,138
13	Southern	1,178	25,271,132	4,759,653	20,511,479	1,448,991
23	Western	1,351	83,775,392	20,191,695	65,583,697	4,411,553

<sup>a</sup>Note—Rhode Island is omitted from this group, its counties having no financial responsibility.

In the New England group, the counties of Maine and New Hampshire have reduced their bonded debts, those of Connecticut have been extinguished since 1880, and in that State and Vermont they have none but floating debts. Vermont counties are nearly all out of debt, and the small floating amounts owed by a few are reduced annually. New Hampshire and Massachusetts also show marked reductions, but Maine counties have increased their floating debt 220 per cent., and Connecticut counties have added 21 per cent. The gross county debt of New England has nearly doubled in 10 years.

In the Middle States, the bonded debts of counties in New York, New Jersey and Maryland have been reduced; in Pennsylvania there has been a considerable increase, while Delaware, which owed none in 1880, has since then issued county bonds amounting to \$545,400. There

has been a net reduction of 18 per cent. in the gross debts of the counties of this group.

In the thirteen Southern States there has been a large increase in this class of indebtedness in some and a considerable reduction in others. Louisiana has the greatest decrease and Kentucky the least, while Texas shows a large increase. The figures for Georgia are considerably larger than those of ten years ago. North Carolina stands last on the list of percentages of increase, showing an advance of 6 per cent. In 1880 Kentucky held first place as to the amount of bonded debt recorded from the counties; in 1890 Texas holds the most prominent position, with a bonded debt of \$6,166,072. Georgia had the smallest bonded debt in 1880, but this position has been accorded to Louisiana for 1890. The totals show an increase of 15 per cent. in the bonded debt of the Southern States as a geographical group. There has been an increase of 83 counties in these States during the past ten years, 66 of them being in Texas.

But while there has been a net increase of 15 per cent. in the bonded debts of the counties of this geographical group since 1880, there has also been a net reduction of 50 per cent. of their floating debts during the same period, so that the total increase of the gross debts of the counties of this entire group of States for the past ten years has been but 3 per cent.

Of the twenty Western States six have decreased the bond indebtedness of counties, while the remainder have added to it, the net increase for the group being 31 per cent. There has also been an increase of 19 per cent. in the floating debt of the counties of three States since 1880, while the gross debt of this group during the decade has been increased 30 per cent.

A recapitulation by groups shows that since the tenth census was compiled the gross debt of New England counties has nearly doubled, in the Middle States it has been reduced 18 per cent., and in the South there has been an increase of but 3 per cent., while in the West the gross indebtedness has been increased 30 per cent.

There is much more significance in these census percentages than appears on their face. Omitting the statistics of the indebtedness of counties in New England and the Middle States, and comparing those of the 13 Southern with the 20 Western States, facts are revealed of momentous import. In the one the gross indebtedness has been increased but 3 per cent.; in the other it has run up to 30 per cent., which enormous difference of ratio is due chiefly to the younger or to the newly created States of the West.

The larger percentages of gross increase in county indebtedness in a number of Western States are given

in the following table in comparison with every increase of percentage in the South:

South States.	Per cent.	West States.	Per cent.
Virginia.....	32	Idaho.....	819
West Virginia.....	73	Minnesota.....	258
Georgia.....	156	Kansas.....	86
Mississippi.....	9	Dakota, North and South.....	317
Texas.....	167	Montana.....	185

Note.—In the remaining eight Southern States there was an aggregate decrease of 226 per cent.

The significance of this contrast is not alone in the enormous per cent. of increase at the West during the last ten years, but in the causes that led to it, and in the conditions still existing, which will inevitably compel the West to go deeper into debt, while the South will continue to reduce its obligations.

All these Southern States, Texas excepted, have been long settled. Most of their county courthouses, jails, bridges and other public works that require large expenditures, leading to the issuance of bonds or to the incurring of heavy floating debts, were completed and paid for long ago. The chief part of their existing indebtedness is due to the issue of bonds voted in aid of railroad construction. Most Southern States have in their constitutions clauses that make it impossible for counties to incur debts beyond a certain per cent. of the assessed value of their taxable property. The counties that have aided railroads by bond subscriptions have, as a rule, gone close to the permitted constitutional margin, and will hereafter be debt payers.

On the contrary, in these new States the counties have been aiding railroads to the full extent of their credit during the past ten years. This was, or seemed to be, an imperative necessity. Most of them, and especially those of the recently created States, have yet to provide their county buildings, construct bridges and do many other things that cost money. Their present indebtedness must necessarily be considerably increased.

The reduction of the gross debts of the counties of eight Southern States (viz: North and South Carolina, Florida, Alabama, Louisiana, Arkansas, Kentucky and Tennessee) during the past ten years (amounting to the aggregate sum of \$4,692,255, while the total net increase of gross debts in those thirteen States during the same period was but \$711,119) is conclusive evidence of the South's advancing prosperity.

This first report from that division of the eleventh census which has charge of the work of collecting the statistics of wealth, debt and taxation, teems with suggestive facts of value to all engaged in attracting capital and immigration to the South, for they clearly indicate the prosperous progress of that section, and suggest comparisons that can be advantageously employed in diverting immigration and capital from the West to the South.

Subscribe to the MANUFACTURERS' RECORD.  
Price \$4.00 a year, or six months for \$2.00.

### Texas Enterprises Not To Suffer Seriously.

Information from authoritative sources enables the MANUFACTURERS' RECORD to set at rest whatever uncertainty there may have been as to the effect of the failure of Potter, Lovell & Co., of Boston, on the Southern enterprises in which they were interested, and for which their concern was a sort of Eastern clearing house. The announcement of the failure caused considerable comment in Southern financial circles on account of the good enterprises in Texas with which the firm was known to have some connection. Our advice is that the embarrassment to these corporations will be only temporary and will not interfere seriously with the projects they have under way. They will be brought out of their difficulties through friendly receiverships.

Potter, Lovell & Co. in their January statement showed a fully paid capital of \$400,000 and a surplus of \$300,000, all of which will be wiped out. They did a business last year of about \$64,000,000, mostly in paper, which they had discounted in New England banks for New England and Southern customers, and it is thought that several millions of this paper will unexpectedly have to be liquidated, owing to the failure.

The trouble seems to have had its origin in Gogebic mining ventures and transactions with the concern of Shaw & Co., the magnitude of which is indicated by the fact that the assignee has attached the latter firm for an account exceeding \$2,000,000.

Potter, Lovell & Co. had managed large transactions for Texas, but the Boston papers agree that these investments were in the main successful ventures, and that they were cornered in lugging the tanneries and other enterprises in the East. They responded to calls for \$1,700,000 in loans in three days, but the pace was so rapid they had to quit. It is thought a new concern will be organized to buy the assets of the suspended firm and attempt to carry on the business.

As to the Texas business of the firm, they were carrying W. M. D. Lee and Abner Taylor, member of Congress from Chicago, for \$700,000, the proceeds of which went into the Brazos River Channel & Dock Co., a corporation that is successfully building the deep-water channel on the Texas coast. The company itself never had any paper out except some bonds as collateral to protect the Lee and Taylor advances. A receivership for this company and Lee & Fergusson, which firm is also interested, is probable, with Major Evans, of Austin, and George W. Angle, of San Antonio, both directors in the Brazos company, as the receivers. This course is considered best, in order that work may not be stopped. The other directors in this company, who are Thomas J. Hurley, U. S. Senator C. B. Farwell,



Major Evans and Hon. Charles W. Ogden and George W. Angle, of San Antonio, are not in any way involved in the financial difficulties growing out of the failure.

Potter, Lovell & Co. were owners of the control of the Fort Worth Land & Street Railway Co., of Fort Worth, and as the latter is indebted to the Fort Worth Loan & Construction Co., the Pullman Car Co. and the Detroit Electrical Works for about \$100,000, it will pass into the hands of a receiver to protect those accounts, which may lead to the consolidation of all Fort Worth's street railroad interests.

The suspended firm had large interests in the Austin and Gainesville street railways, but those corporations have no floating debts and are in good financial condition, and the control is owned by the Hurleys, of Fort Worth, so that the failure applies to the stock held by Potter, Lovell & Co. alone and does not affect the corporate property.

The rumors connecting the firm of J. V. Farwell & Co., of Chicago, with the failure grow out of the fact that all their paper was handled by Potter, Lovell & Co., who also raised the \$3,000,000 with which the Farwells and Abner Taylor built the State Capitol of Texas. J. V. Farwell is given as one of the directors in the defunct company, and the claim is made that under the laws of Massachusetts he is responsible for the firm's debts, but he asserts that he is not legally a director, never having been informed of his election. He does a \$20,000,000 business in Chicago, and was connected with Lee & Fergusson in their Texas enterprises. It is stated that the Worcester Steel Works is crippled by the failure, and is likely to go under.

The total losses by the failure are \$5,000,000 according to outside estimates, but, as we have shown, none of the Southern enterprises involved are likely to suffer disastrously, and in none of these ventures has any money been lost.

THE cotton crop of 1889-90 was the largest ever gathered, exceeding by 373,000 bales the crop of the preceding year, and by 265,000 bales the crop of 1887-88, the largest previous crop on record. The total crop, as made up by Mr. Henry Hester, secretary of the New Orleans Cotton Exchange, was 7,311,322 bales. In the light of the present complete figures it may not be amiss to recall the estimate of crop made by Bradstreet's on December 21, 1889, when uncertainty as to the crop was at its height, and when the generality of estimates pointed to enormous yields, the lowest estimates conceding over 7,100,000 bales, and the highest predicting 7,600,000 to 7,800,000 bales. On the date mentioned Bradstreet's gave the results of a special investigation containing replies from 2,280 correspondents, and stated that, on the basis of an increase in the actual yield corresponding to the increase of the correspondents' estimates over the previous year, the crop of 1889-90 was likely to be 7,211,000 bales. The actual outcome, it will be seen, was 100,000 bales, or 1.3 per cent. larger than our estimate.—Bradstreet's.

THE MANUFACTURERS' RECORD made a prediction as to the cotton

crop of 1889-90 nearly three months earlier in 1889, and which was even nearer the mark than Bradstreet's, made December 21, 1889. The accuracy of our Southern crop estimates has attracted general attention.

#### Domestic Silk Culture.

Slowly but surely the propagation of silk worms, the cultivation of the mulberry, of the osage orange, and of other plants and shrubs on which the silk worm feeds, are making their way in the rural districts, and while this industry has not progressed as rapidly as it might have done since public attention was called to it ten years ago through the earnest efforts of the Woman's Silk Culture Association of the United States, yet sufficient educational work has been done, and enough well-substantiated facts have been placed on record, to make it certain that silk culture can be made a profitable domestic industry.

The Department of Agriculture at Washington has given a considerable impetus to the development of this new industry already, and is prepared to do much more in the same line. The agricultural departments of several Southern States, notably that of North Carolina, have given much information to their people, and, as a result of these various movements by the general government, the States and the Woman's Silk Culture Association, a very considerable interest has been awakened in this subject in many widely separated localities.

Much more remains to be done, however, before this country will even begin to supply a fair proportion of the raw silk required for manufactories already established in the United States. Substantially, all raw material now used is imported from Europe. The American product is but a drop in the bucket, having no appreciable effect on the market price of this beautiful textile.

The importations of raw silk from foreign countries have been increasing ever since protection was accorded to silk manufacturers. The average value of imports of this article for the five years ending June 30th, 1888, was \$16,810,523. The value of that imported for the fiscal year ending June 30th, 1889, was \$19,333,229, an increase over the average of the previous five years of \$2,522,706. The manufacture of silk goods of all descriptions is fast increasing in this country, and with it the demand for raw silk. It has been demonstrated that this can be produced in this country, and especially in the South, of as fine a quality as is made anywhere else in the world. Last year we paid nineteen and a third millions of dollars to foreign nations for this agricultural product—for such it is—that might have gone to swell the earnings of the families of our small farmers. Why not make all this silk at home and get the cash for it?

#### Instruction in Horticulture.

At the annual convention of the Society of American Florists, held in Boston, President Jordan gave an interesting account of the munificent fund provided by Henry Shaw, of St. Louis, for advancing American horticulture. That gentleman has decided to trustees an estate, consisting mainly of productive realty, that is variously valued at from \$5,000,000 to \$8,000,000. None of this property can be sold, but the net income from rentals is to be employed in training young men in the practical work of horticulture. The annual income is now several hundred thousand dollars and is steadily increasing. A school has been established where young men receive lodgings and tuition gratuitously and are paid for what work they do. They will be taught surveying, book-keeping and other branches of knowledge that will be of decided advantage to them in whatever department of horticulture they may eventually select for their vocation.

President Jordan recommended that the rudiments of horticulture be taught in the common schools, so that a taste for this calling might be created, and the youth who wished to improve the opportunities made available by Mr. Shaw's beneficence might be better fitted for appreciating the instruction thus liberally provided.

Horticulture, strictly defined, is the art of cultivating gardens, but during the past century this definition has been greatly broadened, until that term now comprises the cultivation of all varieties of fruits, flowers and vegetables, whether on a large or a small scale. Viticulture and pomology are as much a part of it as are the flowers "in my lady's garden," or the strawberry beds, the celery trenches and the pea patches of Southern truckers. The rapid growth of population in this country; the increasing numbers of people in cities, towns and villages who are not food producers, but who earn their living in other pursuits; the general diffusion of money caused by advancing wages, and the consequent greater ability to gratify personal tastes, are all reasons why horticulture will become increasingly profitable as time advances. Viewed in this light, the splendid gift of Mr. Shaw to his young countrymen assumes a new importance. Through it the standard of horticulture will be greatly advanced, for the youth instructed at the school he has endowed will, wherever they go, be involuntary teachers of new and improved methods, demonstrating by example and by practical results their greater value.

Facilities for transporting safely such perishable articles as fruits and flowers over long distances are increasing at a rate that will before long enable the most remote parts of the country to send their products to any market in which they are needed, while American ingenuity has pro-

vided means for the safe storage of ripe fruits until they are out of season, when they are again in demand at high prices to gratify the luxurious tastes of the wealthy.

The traffic in cut flowers has assumed enormous proportions, and from fall to spring the florists of all great cities often find it impossible to meet the demands of their customers. The business of seed growing has grown to a magnitude and importance of which few except those engaged in it have any conception, while the importation of foreign seeds that might readily be grown in the United States is sending abroad annually many millions of dollars that ought to be kept at home.

The South presents finer opportunities for profitable work in nearly every branch of horticulture than any other section of the Union, and yet until recently there have been comparatively few among its citizens who have ever thought of the subject. Yet there are hundreds of its bright youth of both sexes who, if taught horticulture, would find in it pleasant and profitable employment for their leisure hours, while at the same time they would be laying sure foundations for life-long prosperity. President Jordan's recommendation to common school officials to add instruction in the rudiments of horticulture to the usual studies is earnestly commended to the educators of the South.

A CONTRIBUTOR to Fair Trade, the organ of the protective party in Great Britain, quotes from the New York Herald the following paragraph:

It is said that several large cotton spinners of Great Britain are going to transfer their business to Pennsylvania, some taking their workpeople with them. This experiment has already been conducted on a small scale, and in individual cases, and always with success. It is becoming increasingly difficult to get English cotton goods into the United States on account of the heavy duties, which are to be increased under the new tariff bill. Therefore, it has occurred to many English manufacturers that it is expedient to execute a flank movement on the protectionists by setting up mills in their own country. Thus the American market may be secured, and surplus goods may be exported to England free of duty.

Upon this text the following comments are made:

Now, English workingmen, look on this, and remember! It is not proposed to take you there—and if you do go of your own free will, you naturally enough in a very brief space of time become an alien to your native country. England with her free trade revenue tariff law cannot keep the foreign market even for her cotton goods, but the United States with her protective tariff law can attract the capital and the brains which will employ workmen over there to supply their own market. And this is no solitary case. What can be done in cottons can and will be done in woollens and in silks, in steel rails and other iron goods, in tin plates and in earthenware. It is the migration of capital—for that is free, and goes where it listeth, welcome all over the world, to the detriment of the wage-earning classes. And yet our statesmen and politicians look calmly on, oblivious of the volcano over which they are sliding.

## LETTERS FROM THE SOUTH.

## General Progress and Prosperity.

BANK OF R. A. GRAVES,  
SPARTA, GA., August 30, 1890.

The business outlook for the coming season is exceedingly good and the people generally hopeful. Most of the farmers in this section have made good crops—mostly cotton—and their financial condition has been materially improved. For some 15 days prior to this writing the general opinion regarding crops was that it would be very much larger than it had been in a number of years, but now most of the farmers are of the opinion that the crop will fall short of their expectations, though they believe it will prove as large as last season's. The general progress and prosperity of this section has been increased to a great extent, and the present outlook indicates still greater progress.

R. A. GRAVES.

## Earnestness, Confidence and Prosperity.

PRESIDENT'S OFFICE,  
CAPE FEAR & YADKIN VALLEY RY. CO.,  
GREENSBORO, N. C., Sept. 4, 1890.

The indications of prosperous times ahead for this section of North Carolina were never more favorable. There is an earnestness in the business activity of our people and a confidence in themselves and the natural resources of the country which has never been so apparent as now. There was almost an entire failure of the fruit crop, and the wheat crop was a very small one, but there will be a bountiful crop of corn, and the tobacco and cotton crops will be immense. Our manufacturing enterprises are prosperous, and new industries are springing up all around us. Everything betokens the advent of an era of progress and prosperity.

JULIUS A. GRAY.

## Winston's Bright Prospects.

OFFICE OF P. H. HANES & CO.,  
WINSTON, N. C., Sept. 2, 1890.

The prospects for Winston are brighter than ever before in her history. The 100 factories are all running on full time, the electric street railway is an emphatic success and is paying well, and the work of paving the streets is rapidly progressing. The \$200,000 voted by the city for internal improvements will make a decided change in the appearance of things, and has already given an additional impetus to every legitimate enterprise. Just now seven large factories are in process of construction. A number of new stores and dwellings by the score are going up. The final plans for the \$100,000 hotel have been submitted and approved, and the contract will be let at once. A beautiful boulevard four miles in length is now being constructed through the grounds of the West End Hotel & Land Co., and lots will be put upon the market at an early day. The census returns show that Winston is now the second city in the State, and it is safe to prophesy that it will ere long reach the first place. In the country about us everything is prosperous. The tobacco crop promises to be the best for many years. Corn is looking remarkably well. The seasons have been all that could be desired, and the farmers are much encouraged. With good crops and increased activity in all industrial matters, we feel sure that our section of the State will be the center of attraction for the investment of Northern and foreign capital. There can be no better opportunities than we offer here. The Richmond & Danville Railroad Co. has extended its line up the valley of the Yadkin, and regular trains are now running to Wilkesboro, a distance of 75 miles above this place, and the engineers are at work upon a line from Wilkesboro to Johnson City via Cranberry. Large deposits of magnetic iron ore have been discovered in almost unbounded quantity at several points along this line between Winston and Wilkesboro. These large veins are in the same line with those

at Cranberry, and an analysis shows that the deposits are identically the same. Considerable interest has already been manifested in iron, and an English expert declares that there are no better ores in Alabama or Tennessee than these around Winston. The only wonder is that they were not earlier known. An English syndicate has just purchased one mine for \$50,000. Track-laying has been begun upon the new railroad to Mocksville and the Southwest, and work upon the Roanoke & Southern is being rapidly pushed toward Roanoke, Va. Regular trains are already running beyond Madison, and the track will be finished to Martinsville, Va., a distance of 70 miles, by November 1. The whole line from Martinsville to Roanoke is under contract, and a force of 800 hands is at work upon it. The engineer has already been over the line to the south, and it will be extended at once. A corps of engineers are surveying for a new road from Wadesboro to Winston. We are destined to become the railroad center of the State, and that, in addition to our great tobacco interests, we must become a center of the iron, coal and lumber trade.

P. H. HANES & CO.

Great Activity at Marion, N. C.  
OLD NORTH STATE LAND CO.,  
MARION, N. C., Sept. 5, 1890.

Marion and vicinity can promise more development than probably any point of its size in the South. The early completion of the C. C. & C. Railroad to Marion, the erection of a planing mill and wood-working factories, the erection of an iron furnace a few miles north by the North Carolina Bessemer Co., the building of three large hotels, a dummy line and the organization of a \$1,000,000 gold mining company by Boston capitalists, besides other enterprises expected, have given Marion a boom that but few towns in any country enjoy, and the prospects are the boom is only started, as Marion is all alone in this immediate section without any competitors. The farming lands around Marion are being bought up by a good class of farmers, and farming lands have advanced 100 per cent. within the last year.

D. N. HITCHCOCK, Secy.

MORE fortunes have been made in Virginia during the last 12 months than in the preceding 12 years, and the next 12 months will show many more even than the past twelve. The whole State has just commenced a great forward movement, and at many points where wheat and corn fields stand to-day will be prosperous towns a year hence. This is a day of rapid progress. The whole country is moving forward as never before. Its wealth and population are increasing so rapidly as to be almost beyond comprehension, and it is here in the South that the greatest activity will be seen. The millionaires of five or ten years hence will be the leaders in the South's present era of development and the judicious investors in its mineral and timber lands or city property. And in all probability Virginia will be able to show a list of millionaires a few years hence that would seem almost impossible to expect now.

MESSRS. CARROLL & STACY, bankers, Gaffney City, S. C., have recently decided to discontinue their cotton business altogether and devote their entire time to banking. They have erected a new iron-front bank building, fitted with Hall's latest improved fire and burglar-proof bank fixtures. The firm also has a number of safety deposit boxes, insuring absolute privacy to those desiring to safely keep valuable papers.

## THE MISSISSIPPI RIVER.

## Manner and Extent of the Work Done Under the Supervision of the Commission.

[Written for the MANUFACTURERS' RECORD.]

The preliminary report noticed in the preceding chapter was followed January 8, 1881, by a statement of the progress made by the commission in surveys, observations and examinations, together with others of a preliminary nature concerning the upper Mississippi, from the Falls of St. Anthony to the mouth of the Illinois river, and upon the proposed reservoir system. To these were appended the report of a special committee of the commission on the subject of outlets and levees on the lower river. While in the main report and its appendixes there was necessarily much theorizing and speculative argument, because the time had been insufficient for the collection of all the data upon which accurate conclusions could be based, still there had been a sufficient number of facts ascertained to enable the commission to recommend a continuance of the work on the upper Mississippi on the plan employed by the army engineers, and to increase confidence in the practicability of the system of work proposed in the first preliminary report for improving the lower Mississippi. It was made clearly apparent in these several reports that Congress had undertaken a work that would require a long time and a large expenditure to complete, and that true economy required that as far as possible the work should be continued without interruption to a finish, and that in places where this could not be done during the high-water periods, the rule should be to construct only so much as would be reasonably certain to resist the effect of floods and remain intact when they subsided. It was shown that the system required for the improvement of the upper river was in many respects unlike that needed for the lower, because of the difference in their natural conditions, but that, notwithstanding these differences, it was essential that the improvement of the entire stream, from its head-waters to its mouth, should be under one supervision in order to insure unity of plan, economic work and a successful outcome.

That Congress appreciated to some extent, at least, the importance of the work and had confidence in the wisdom of the plans of procedure adopted by the commission was manifested by the appropriation of \$1,000,000. (Act of March 3, 1881.) As the work advanced and its good results became more and more apparent, Congress continued to make specific appropriations until the sum total of these and of unexpended balances of appropriations for local works which were transferred to the commission's account from March 3, 1881, to August 11, 1888, amounted to \$13,381,581.77. Of this large sum there remained to the credit of the commission at the close of the fiscal year, June 30, 1890, a balance of \$375,618.34. The expenditures during the nine years were:

For river works.....	\$9,759,217.89
For levees.....	3,183,745.54

Total.....\$12,942,963.43

This large outlay includes, however, the cost of the extensive plant which it was necessary to create at a cost of \$1,500,000 for the prosecution of the work. This consists of steamers, barges, a great variety of machinery and utensils, none of which, except for the usual expenditures on account of wear and breakage of tools, will need to be renewed during the further progress of the work.

In addition to the cost of the plant considerable money was expended in the first year or two of the commission's existence in experiments. It was necessary to put theories into practice to test their value.

The commission wisely followed Davy Crockett's famous motto, "Be sure you are right, then go ahead." To have done otherwise might have caused so great a waste of money upon valueless works that the country, wearying of such futile efforts, might have insisted upon the abolition of the commission and the abandonment of all further attempts to control the river. But when investigations and experiments had shown conclusively what were the right things to do, a system was adopted and followed that has accomplished far more than many advocates of the commission dared to expect, and which bids fair, when the work shall be finished, to justify the faith of the late Captain Eads in "the entire feasibility of so correcting the Mississippi from Cairo to the Gulf that a channel depth of 20 feet during low-water seasons can be permanently secured throughout its entire course, and that the alluvial lands on each side of its waters can be made absolutely safe from overflow."

This system consisted of three classes, viz: levee repairs and construction; revetments for the protection of caving banks, and contraction works, which consist of the construction of permeable dikes in certain places designed for the immediate local deepening of the channel for the benefit of navigation. In his testimony before the Senate committee on the improvement of the Mississippi river May 21, 1888, Capt. S. S. Leach, U. S. A., gave the following description of the methods of levee construction:

"The line of the levee is located from various considerations that affect it, but we try to get it on the highest ground, so as to make the least height of embankment. It also must not come too near the river, and it must not go too far away from the river, because that makes it too high. You want to get as near the river as possible to be on the high ground, but you must not get too near, or it will be caved in shortly. When the line is determined, a swath 200 feet wide is cleared, and about in the middle of that swath an interior line, equal in width to the base of the levee, is thoroughly cleared of all surface vegetable matter, leaves and everything of that sort. Near one side of the crown of the levee, say 3 feet from the center-line of the levee, on the river side, a ditch is dug which is 2 feet wide on top, 1 foot at the bottom and 3 feet deep. That ditch is excavated, and then a clear, fresh sub-soil, which does not contain any roots, is put into the ditch and packed. This is generally done by a boy on a mule, riding up and down the ditch until the mule will scarcely make a print. This ditch, being thoroughly tramped, cuts off any possibility of the water soaking through the ground under the levee in any quantity that would be dangerous; and any continuous root-channels, and particularly the burrowing of animals, will be cut off by this ditch. The embankment is then begun and carried up to the necessary height, the standard height in the upper part of the river being 3 feet above the highest known water. The slopes are usually  $\frac{3}{4}$  on each side to 1, and the crown is generally about equal to the height. So you may say that the base covered by a levee is 8 times the height, 7 times in two slopes and once in the crown, practically 8 times; so that an 8-foot levee will cover 64 feet of ground.

This levee is constructed in a very solid manner. Great care is taken that all parts of it shall be clean, and it must be carried out regularly from the slopes in uniform layers, so as to get perfect compactness and uniform settlement. When it is done with barrows, it is carried one-fifth of its height above the true grade, to allow for settlement. If it is done with teams, which of course pack it very much closer, it is not necessary to carry it so high. That is to say, for a levee the grade of which is 10 feet high, the barrow work is



carried up to 12 feet, with the expectation that it will settle 2 feet. Team work we put up to 11 feet or above.

The surface of the levee, after it is finished, is dressed and soddied with Bermuda grass, which affords a very tough sod, and prevents a heavy wash. It runs very rapidly, and lives longer than any known grass under the water, so that there is less probability of killing the grass while the water is above it."

Revetment and dike works have been scarcely more than begun. These have been appropriately defined, the first as defensive, the second as aggressive works. The purpose of a revetment is to stop banks from caving. To do this a mat is woven of green, flexible willow shoots. The process of making it and placing it in position was described by Capt. Leach to the Senate committee as follows:

The mattress is woven continuously. We have a barge on the river with a loom, as it may be called, on it. We weave the width of the barge, and then let the barge slip out until the woven edge comes down to the front edge of the barge, and then weave on another shift, and slide that off, and so on, going down the river as far as the slope of the bank, the strength of the current and other circumstances of construction will permit. The lengths usually woven, speaking generally, are not far from 900 to 1,100 feet. When that is done the mat is thoroughly bound together with cables so as to make it sufficiently strong. Barges are brought along the outside, and men with wheelbarrows haul stone on and deposit it uniformly just as long as they are able to go on with a loaded barrow. In other words, they destroy as much of the floatation as can possibly be done. Then some stone is carried on board at the head and thrown on the head of the mat, which is held up from the barge by ropes. When a superabundant weight is on the mat the ropes from the barge are slackened, and it sinks four or five feet below the surface. The sunken portion extends only 100 feet or so down the stream; that leaves a little space of clear water, and in that water we float in loaded barges. They are fastened to the mooring barge at the head of the mat by lines at each end, and skilled linesmen are placed at the ends to slacken off the lines when everything is ready. A gang of men is placed along the side of the barge, and as they are dropped down they keep throwing stone off, and the head of the mat being lowered to the bottom at the same time, the whole structure is swept down to the bottom."

The slope of the caving bank is covered in the same manner up to high-water mark. The silt suspended in the flowing current is caught in the interstices of these mats, soon filling them compactly, and creating a solid wall, which finds a support on the tough clay layers of which the banks in part consist, and, "being held in place by them, it in turn holds the sand layers in place."

The dike or aggressive works are local in their position and effect, but are general in their benefits. They are designed to afford greater depth of water for navigation, but they have no immediate relation to the bringing of the river under permanent and complete control. "They are formed," said Captain Leach, "by driving piles at intervals in the bed of the river and connecting them strongly by timbers and iron ties, etc., to give them the requisite strength to resist the onset of the current, of ice and of drifts. They are run out from the bank in parallel directions, a system of them beginning with a short one at the upper end, followed about four or five or six or seven hundred feet down by one extending a little farther out, and so on down until the last one is reached, which extends out to about where the corrected channel is designed to be." Their action is to silt up large areas of the present

bed, forcing the water to flow through a narrower low-water bed than it naturally would do—forcing it to remain in a single channel and to scour out the four or five feet depths to ten or twelve feet, or as much more as can be obtained.

Of the good results that have accrued from these various classes of work there is voluminous evidence. River men whose business has made them familiarly acquainted with the Mississippi for many years are now warm and cordial supporters of the commission, although when it was created ten years ago their feelings towards it were the reverse of friendly. In March, 1868, the Pilots' Benevolent & Improvement Society, whose members reside in St. Louis, Pittsburgh, Cincinnati, Evansville, Cairo, Memphis, Vicksburg and New Orleans, passed unanimously the following resolution at a meeting held in St. Louis, and forwarded an attested copy thereof to the chairman of the River and Harbor Committee of Congress:

"Resolved, That we, as a body, emphatically indorse the past workings of the Mississippi River Commission in the improvement of the Mississippi river, and base our decision on our every-day observation of the work and its beneficial effect in deepening the channel of the river."

The merchants of Memphis, Tenn., realizing the great danger threatening their business interests because of the caving of the banks on their water front, raised the sum of \$60,000 by subscription, and expended it upon works similar to those of the commission, and succeeded in converting the caving bluff into a solid wall which has stood the assaults of two large floods without impairment. This was a more practical expression of approval than the resolution of the pilots.

The most recent and perhaps the most convincing testimony of any on record, appears in the report submitted April 30, 1890, to the Mississippi River and Levee Improvement Convention, by a committee of 14 engineers, to whom had been assigned the duty of preparing a statement on the subject of levees. The great flood of last spring was slowly subsiding when this convention, comprising influential delegates from 7 Mississippi river States, assembled to consider the situation. The report submitted by their committee of engineers contained the following statistics:

In 1882 the total number of crevasses in the levees was 284, aggregating 56 9-10 miles in width. In 1883 the number of crevasses was 224, with an aggregate width of 34 and 1-100 miles. In 1884 the crevasses numbered 204, aggregating 106 and 4-100 miles in width.

The result of the crevasses enumerated during these three years was a general overflow of the Mississippi Delta. In the present flood, the dangers of which are nearly passed, the crevasses which have occurred number 23, aggregating about 4 1/4 miles in width, in a total length of 1,100 miles of levees, one-half of one per cent. of the total lines of levees, notwithstanding that the present flood has exceeded those of the three years cited in the height attained at Memphis and all points below and has not been exceeded in duration.

This excess of height was: at Memphis 0.5 feet, at Helena 0.6 feet, at Sunflower landing 1.2 feet, at Arkansas City 2.3 feet, at Greenville 1.7 feet, at Providence 3.1 feet, at Vicksburg 0.1 feet, at Natchez 0.8 feet and at New Orleans 0.5 feet. The general result has been a large measure of protection afforded by the levees this year, notwithstanding the extraordinary character of flood, which has never been enjoyed during previous high waters of considerable magnitude. For example, in the Yazoo basin between 80 and 85 per cent. of its area is protected from overflow, there being only one crevasse of 280 feet width affecting a very small area. In 180 miles of levees, extending from the upper extreme

southward, there were other crevasses on this front below that locality. On the Texas front are two reaches of continuous levee, being respectively 81 and 125 miles in length.

The right bank below Red river has 180 miles of continuous unbroken levee, and the left bank has 200 miles with only one break. Of the territory dependent upon the last named levees 75 per cent. has been protected. The percentage of areas protected as above noted embrace all classes of land subject to overflow as the lands for cultivation on the more elevated portions the percentage of lands protected is much greater.

In view of these statistics the committee was justified in declaring "that very great progress has been made during the past five years in the construction of a complete levee system by the joint efforts of the general government and the riparian States, and also that experience of the present flood has strongly added to our conviction that such a system presents the only solution to the problem of the protection of the alluvial valley from inundation in connection with the general improvement of the river."

## A PROGRESSIVE ALABAMA CITY.

Organization of the L. P. Grant Land Co. at Opelika.

Opelika, Ala., Sept. 8, 1890.

Editor Manufacturers' Record:

Among the cities of the South which have recently come into prominence as trade, manufacturing and industrial centers, Opelika, Ala., deserves more than passing mention.

Located at the intersection of two of the most important railways in the country, with two other lines stretching away to the northeast and southwest and another projected and already incorporated, its iron arms reach out into the very heart of the richest mineral, timber and agricultural sections of Georgia and Alabama. It has direct railroad communication with Atlanta, Birmingham, New Orleans and Savannah, and twenty-two passenger trains pass through it daily. It is situated on an elevated ridge or plateau marking the dividing line between the mineral and timber sections of the State. Its proximity to the immense coal and iron deposits of North Alabama and to the pine forests of Southwest Georgia and Southeast Alabama offer unusual inducements to all kinds of manufacturing and industrial enterprises. Its five lines of railroad afford easy and ready transportation for manufactured goods and raw material to and from all parts of the country. Coal and fuel of all kinds can be laid down here at very small cost, and, being a competitive point, the freight rates are as reasonable as at any of the neighboring cities.

The attention of capitalists has lately been attracted to this place, and large and well-paying investments have recently made. Within the past twelve months a compress having a capacity of compressing 170 bales of cotton per hour, electric-light works, wheat and grain mill, ice factory, foundry and machine shops, spoke, broom and handle factories have been established. An extensive knitting mill, wagon, blind, sash, door and furniture factories, cottonseed oil mill and fertilizer works have been in successful operation for two years or more. The high grade of goods manufactured by these industries, together with the accessibility of markets, have created a demand in excess of the supply, and preparations are now in progress to increase the output.

As a place of residence there is not a more desirable city in the South than Opelika. Its altitude of 900 feet above the level of the waters of the Gulf renders its climate delightfully cool in the summer

and mild and pleasant in the winter. Its distance from any marsh, swamp or lowlands, its perfect natural drainage, its abundant supply of pure water and complete exemption from all malarious, contagious and infectious diseases has made it noted for a long time as a health resort. With an excellent system of public and private schools, handsome and commodious churches, its educational and religious privileges are quite as good as those of any city in the land.

Opelika has a population of about 4,000 inhabitants, and additions to that number are being rapidly made. Its growth has always been solid, substantial and permanent. It has never had a "boom," and wants none. What it does want and needs are more manufactories of all kinds. A cotton mill and car works are especially desired, and for plants of that description a more advantageous location cannot be found. Cotton is here in abundance, and the supply of timber, iron and coal within easy reach and at moderate prices. Liberal inducements are offered to manufactories and enterprises of every description. Investors may be sure of a cordial reception, and of a ready and hearty support, financially and otherwise, in their undertakings. Subscriptions to stock in meritorious enterprises will be taken by home capitalists.

To aid in the substantial development and prosperity of Opelika the L. P. Grant Land Co. has recently been organized and incorporated. A large tract of land, centrally located and within the corporate limits of the city, has been purchased by it. Included in this tract are a large number of lots suitable for residences, extensive grants on the Western, the Columbus & Western and East Alabama Railroads admirably adapted for manufactories of all kinds, and some choice business lots. This property is held at moderate and conservative prices, and can be purchased on satisfactory terms by all parties seeking homes and investments.

This company also conducts a general real estate agency, and will cheerfully furnish information to inquirers. In addition to its own property it has for sale unimproved business and residence lots, acreage tracts within the city limits, and valuable farming, mineral and timber lands in this and adjoining counties.

Its facilities for buying, selling, renting and exchanging real estate are unsurpassed.

THE Middlesborough Democrat makes the following comment on the work of the MANUFACTURERS' RECORD:

Among the most important and potent agencies in the development of the South is that excellent publication, the MANUFACTURERS' RECORD. Each issue is an epitome of the astonishing development now going on steadily in the Southland, and the amount of information it furnishes is surprising. It is the leading exponent of our progress and prosperity, and the facts and figures with which its columns teem have opened the eyes of all who are interested on economic questions of the present day. A perusal of the MANUFACTURERS' RECORD will surprise the reader, and give him a comprehensive idea of the tremendous activity and material development now going on south of the Ohio and Potomac—a development which marks the beginning of a new era in our national life, and which in time will make ours the richest section of the Union. This progress cannot be stayed by the futile and vindictive efforts in our Congress to discredit us. Capital will seek those points where it can reap its richest reward, and it is now pouring into the South by millions. The MANUFACTURERS' RECORD is largely aiding in this grand work.

## GENERAL NOTES.

At a meeting of the board of directors of the Fort Payne Coal & Iron Co., held in Fort Payne recently, Mr. W. P. Rice was elected first vice-president in place of Governor Goodell, who resigns on account of his health. Mr. Rice is more than ever satisfied with the outlook at Fort Payne, and has recently increased his holdings of the stock of the company very largely.

A CONVENTION has been called to meet in Fort Worth on September 24 of representatives of trade and manufacturing organizations and other agencies for promoting the industrial and mercantile interests of Texas, to decide on a plan of united action in placing before capitalists and manufacturers of other sections the resources and prospects for investments in Texas. The meeting is being arranged by the Fort Worth Chamber of Commerce, and favorable results are anticipated.

THE purchasers of the lands surrounding the natural bridge at Natural Bridge, Va., are maturing plans for building a magnificent summer resort. The syndicate have chartered the Natural Bridge Park Association, and propose erecting a \$250,000 hotel of brownstone and granite, to be of the most modern style and lighted by 600 incandescent and 12 arc lights, and intend making the surroundings equal to any similar resort in the country.

THE city council of Knoxville, Tenn., has passed a resolution to issue the \$275,000 of bonds to pay the subscription which the Knoxville Southern Railroad Co. became entitled to by completing its line to Knoxville on time. The road connects at Knoxville with the Knoxville & Cumberland Gap Railway, which line furnishes a connection with the Louisville & Knoxville at Middlesborough, Ky., giving that city a continuous line of nearly 300 miles by way of Knoxville to Atlanta, Ga., and passing through a prosperous country.

DR. GEORGE W. REYNOLDS, of Sandy Bottom, N. C., writes that an analysis of minerals found on land jointly owned by himself and J. D. Conn, of Hendersonville, N. C., discovered the existence of gold, silver, copper, lead, manganese and magnetic iron ore within the boundary of 340 acres. An offer of \$100,000 has been made for the property, but the owners are desirous of forming a stock company to develop. Dr. Reynolds has been prospecting for minerals in the South for the last 18 years, and previous to going South had 19 years' experience on the Pacific coast. He is enthusiastic over the extent and value of the South's mineral resources.

It is stated that nearly \$60,000 have been netted from the Thomas county (Ga.) crop of Le Conte pears this season.

THE total of the assessed realty of Norfolk, Va., according to the 1890 assessment, is \$19,925,190, an increase of \$5,519,705 over the present assessed value.

CONSIDERABLE comment has been created by the removal of New Jersey glassblowers in large numbers to the South. The Philadelphia Record says: "Almost simultaneously with the announcement that large numbers of Belgian glassblowers propose to compete with American workmen of the same class in different parts of New Jersey comes the report that a colony of South Jersey blowers and their families has gone to Augusta, Ga. Last Saturday a party of over 40 glassblowers and the members of their families left Clayton, Bridgeton and Williamstown, N. J., and took passage on the steamer Savannah for Augusta. Glass works are to be started in that city, and it was necessary to import laborers from the

North. The glass industry is just sprouting from a seed in the South, but in a very short time a large number of window glassworkers will be taken to Augusta. Agents from that city have been in South Jersey and Philadelphia for some weeks searching for workmen. The men who went South last Saturday are all skilled glassblowers and command high wages."

AMERICUS, GA., a few years since had but one bank; now four banks, with a combined capital of \$400,000, and a \$100,000 loan and trust company are required for the transaction of business.

THE investments in new buildings at Columbus, Ga., for 1890 amount to nearly \$1,000,000.

JOHN J. PHENIX, of Greensboro, N. C., confirms the report that oil had been discovered near that city, and states that local chemists pronounce the oil petroleum. A movement is on foot to develop the oil lands.

THE Bluffton Car Wheel Co. has just been organized with a capital stock of \$50,000. The officers are Chas. B. Parker, of Bluffton, Ala., president and manager; H. B. Burns, clerk. The directors are Saml. J. Anderson, of Portland, Me.; Wm. M. Pennell, Brunswick, Me.; J. E. Scates, Saccarappa, Me. The shops are to be located at Bluffton, Ala., the same place to which the American Arms Co., of Boston, is about to remove. Bluffton is one of the new iron towns of Alabama, and is on the property of the Bluffton Land, Ore & Furnace Co., which owns the "Iron Bluffs" mines, said to be some of the most remarkable deposits of brown hematite ore in the South.

THE Savannah Morning News in its annual trade edition summarizes Savannah's commerce for the year ended August 31, showing that the business of Savannah was unprecedented. The total receipts of cotton reached 956,517 bales, an increase over the previous year of 128,000 bales, making Savannah the second cotton port of America. The compilation of value of the year's trade shows a total of \$133,800,000, an increase of \$25,450,000 over the previous year. The value of naval stores receipts was double that of the previous year, and the increase in foreign exports over the year before is over \$12,000,000, while the increase in total tonnage entering the port was 200,000 tons. The increase in the population during the last decade was 41 per cent. Nearly all of the increased population was acquired in the past two or three years. The increase in the jobbing trade was wonderful. The merchants are exceedingly prosperous. A very large number of new buildings are in course of construction.

It is estimated that \$850,000 has been invested in buildings in Brunswick, Ga., during the year ending September 1. The number of buildings foots up 285, ranging in cost from \$400 to \$65,000 each.

THE Textile Colorist, of Philadelphia, has received from Mr. Charles Toppan, of Salem, Mass., samples of ungummed ramie fibre prepared by the process he discovered (which has been noticed at length in former issues of the MANUFACTURERS' RECORD), also of yarns spun from the same. Of these the editor of the Colorist says: "The fibre is as fine as silk; in the condition prepared for spinning it is as long as wool of good staple, and the yarn is equal in fineness and nearly equal in strength to silk. No special machinery is required to work it, but the usual machines for cotton, wool or silk are employed. There is, therefore, no extra expense required to introduce ramie in any existing mill, and it may reasonably be expected that with the results of the Toppan process placed in tangible form before the

public, the ramie industry will within no long time be firmly established in this country ahead and in advance over the feeble attempts of European industries. Farmers who are now engaged in raising unremunerative crops, seeing that a market is being established for ramie, will no longer limit themselves to experiments on a small scale, but utilize the experience made to regularly cultivate the plant in some parts of the country in preference to grain, and it can safely be predicted that in four or five years a ramie culture will be established able to supply the raw material to American manufacturers in sufficient quantities to exclude the foreign product, and perhaps even to export it." Some time since a company was organized to manufacture ramie products by Mr. Toppan's process, which, "in the absence of an American supply, imported large quantities of Chinese and Indian ramie, and without making any noise about it, quietly worked it under Mr. Toppan's patents for ungumming, preparing for spinning and bleaching, and is prepared in a few months to supply the market with the first American all-ramie goods for ladies' and men's use."

ON the first of September some of the leading papers of the South issued special editions showing the marvelous progress of their particular sections. The Charleston News and Courier and the Galveston News, among others, presented to the public a complete statement of the industrial condition of Charleston and of the Lone Star State respectively. The News and Courier shows that for the fiscal year ending August 30 the trade of the city has amounted to the enormous sum of \$80,619,717, an increase of about \$4,000,000 since last year. In the past four years the city has erected buildings to the value of \$5,671,885. Charleston now has 360 important manufactories employing 5,722 operatives and producing annually from an invested capital of nearly \$9,000,000 products valued at thirteen and three-quarters millions. Two cotton mills have been added in the past year, a bag factory and cotton flannel factory. The banking capital of Charleston is \$1,340,000. The deposits are \$7,664,000, and surplus \$1,422,400. Thus it will be seen that the surplus exceeds the capital by \$82,400. It takes 12 pages of the News and Courier to fully set forth the prosperous condition of Charleston. Texas, too, has prospered and advanced wonderfully, as is shown by a perusal of the Galveston News. The exports of that State amounted for the year ending August 31 to \$129,234,528. The estimated value of assessed property in Texas is \$780,000,000. There are 9,148 miles of railroad reaching every thickly settled portion of the State. For the season of 1889-90 the cotton crop amounts to 1,743,320 bales. One hundred and fifty-seven towns and cities of Texas are described interestingly, and these descriptions make a valuable addition to the industrial information already collected about that State. In Galveston, the principal seaport of Texas, \$2,013,000 of capital is engaged in manufacturing. That city alone has exported during the past year \$47,621,900 worth of products. The volume of merchandise transactions reaches the sum of \$37,015,000.

CORDELE, GA., which 30 months ago was a cotton field, is now a thriving little city of 2,000 inhabitants. A \$50,000 hotel is being erected there and the population is turning its attention to manufactures. There are at present in active operation in Cordele a \$100,000 cotton mill, a \$100,000 guano factory, a \$50,000 ice factory, a \$50,000 shoe factory, a \$50,000 foundry and machine shop, a planing mill and novelty works, a barrel factory and bottling works, together with a number of other smaller

industries. The town is also to have a carriage factory and an agricultural implement factory. An opera-house is being erected. In Dooly county, in which Cordele is situated, are 50 steam saw mills.

THE Newport News Land & Development Co., of Newport News, Va., has been incorporated with a capital stock of \$100,000. On October 15th next the company holds a public auction for the purpose of disposing of 1,000 lots on easy terms. Streets have been laid off and graded. These will conform to the streets of the present town, which contains 5,000 inhabitants. Newport News is a thriving town, and its dry-dock and ship-yard will give employment to 5,000 men in the next 12 months. The town has a grain elevator of 2,000,000 bushels capacity. A cotton factory is projected. Here is the terminus of the Chesapeake & Ohio Railway, which helps materially to advance the interests of the place.

THOMAS B. LUMPKIN, of Buena Vista, Ga., is the owner of a valuable deposit of kaolin, pure white, inside the corporate limits of that town. This supply is said to be well nigh inexhaustible. Dr. L. B. Clifton, of Macon, gives the analysis as follows: Silicic acid, 98 per cent.; alumina, 4.4 per cent.; lime, .4 per cent.; magnesia, .2 per cent.; oxide of iron, slight trace; water, .6 per cent.; loss by combustion, .4 per cent. There is a small amount of sand running through the kaolin, and Mr. Lumpkin desires information concerning machinery to remove this. Dr. Clifton, in his report concerning this deposit, states that this sand is of a superior quality and is valuable in making the highest grades of glass. Besides the deposit of kaolin are deposits of blue clay and ochre on the same tract of land. The clay grows very hard by exposure and will take a very high polish.

## The Bluffton Excursion.

An excursion which has been planned by the Bluffton Land, Ore & Furnace Co., will afford an opportunity to visit some of the industrial cities of the South at a good time, and the entire expenses of the trip will be brought within very reasonable figures, owing to special arrangements which have been made with the railroad companies. The agent who is in charge of the excursion for Baltimore and vicinity has succeeded in working up a lively interest in the proposed trip, not only here, but in Hagerstown, Frederick, Wilmington and other cities.

The excursion will leave Camden station on the morning of October 11. At Shendoah Junction the Baltimore party will be joined by parties from New York and New England, and will proceed to Luray for a look at the celebrated caverns; thence to Natural Bridge, Knoxville, Chattanooga, Fort Payne, Birmingham, Anniston, and lastly Bluffton, which will be seen more at leisure, the excursionists stopping at the new Hotel Signal. At all stopping places the party will be shown around in carriages. The Bluffton Co. proposes to give the guests a good view of the South before rounding them up at Bluffton, where they will see the great bluffs of iron ore from which the town takes its name. "Maine's Mountain City" is another name given it from the fact that Maine money and men are behind its development.

In view of the great activity in the South the opportunity to see so much of that favored section is a very favorable one, aside from any profits the excursionists may reap from investments at Bluffton. The fare for the round trip, including sleepers, meals and carriages, is \$55, and less than a week's time will be consumed.

If you wish to keep posted on the progress of the South, read the MANUFACTURERS' RECORD. Price \$4.00 a year.



## PROGRESS AT CARDIFF.

The Big Excursion to Leave Boston  
October 4—Railroads to be Built.

CARDIFF, TENN., Sept. 6, 1890.

Editor Manufacturers' Record:

The Northerner who selects the time of the excursion for his initial trip South will not only enjoy all the comforts and luxury that the faultless service of the special trains will furnish, and escape the changes made necessary on regular trains, but he will come in the season of all seasons to travel in this beautiful country. Leaving Boston Saturday afternoon, October 4, he will arrive in Cardiff Monday, journeying by daylight through the beautiful East Tennessee, famous in song and story. The Indian summer here excels in its mildness and pleasing qualities the climate of any country, and this is the time the excursion will be made.

A survey is now in progress for a railroad from Cardiff to Athens, Tenn., a distance of about 30 miles. Those who have followed closely the history of railroad building in the South will remember that the attempt to build the Carolina, Knoxville & Western Railroad proved a failure after about 125 miles of road bed was graded, owing to financial difficulties. But the project was not abandoned. A new company was formed and the road has now been completed and trains are now running through from Knoxville to Augusta, Ga. This road passes through Athens, and here the Cardiff extension will connect with it, giving a direct line from here to the seaboard. It was only last week that ground was broken at Crossville for the Genesis & Obed River Railroad. Crossville is some 25 miles northeast of Cardiff, and it is the intention of the projectors of this road to make Northern and Western connection with Nashville and to extend their line south to Cardiff, making connection here with the Cincinnati Southern and the road to Athens. The first project will be pushed rapidly ahead, and the other will be but a natural result of the former.

The upland territory of the Cardiff Coal & Iron Co., the Cumberland plateau, is a stockman's ideal grazing ground, and that it is all that is claimed for it is now being illustrated by the action of Vice-president Young, who has recently purchased some blooded sheep and turned them out there for the winter. Other stock will soon follow the fortunes of the sheep, and they will have a most magnificent grazing ground 50 miles square. Referring to this territory a Cardiff man says: "This land, in its contour and character, is almost a counterpart of an old English park, studded deep with spreading oaks, clear of underbrush and rich in velvety turf. One can drive in a carriage for miles through the forest—the roads are natural highways. Here stock can live almost the year around—a grazing ground unsurpassed in the entire country. I am surprised that stock growers have not long before this seized upon this opportunity, for I know not where its equal can be found. Here, also, is a veritable lumberman's paradise—timber of the finest quality, in great variety and of limitless extent, covers this vast territory. On this field is the Cardiff coal supply, to be made of easy access by the building of the railroad from that city."

Cardiff is essentially a New England town, its population being largely made up of New England people, and yet one marked point of difference it presents in the way of its general appearance; and that is the harmony which exists between the architecture and decorations of the various buildings and their environment. In this the excellent taste and judgment of Architect Bosworth and his assistants, Messrs. Ladd and Fitzgerald, is apparent. The beauty of the town-site has not been

marked by ugly permanent structures, and if the beginning predicates anything of the completion of our city, Cardiff will be noted not alone for the wealth of her resources, the rapidity of her growth and the beauty of her location, but also for the attractiveness of her buildings and their harmony with their surroundings.

It is now expected that the temporary water works will be ready for operation next week. While they are but temporary, yet they are superior to the permanent works of many larger places. The water is pumped from the wonderful Hembree spring, which furnishes a supply of nearly 50,000 gallons a day, to a huge tank on the height of grounds near Monroe street, and from there distributed throughout the city. About 3,000 feet of pipe has already been laid.

Families with children who contemplate coming to Cardiff will be pleased to learn that it is the intention of the company to take immediate steps to provide adequate educational facilities for children of all ages. In addition to the excellent primary school now established here, another school where higher branches will be taught will be provided. The scope of this department has not been fully determined upon, but it will undoubtedly be such as to meet all requirements. As soon as possible good, permanent schools with a competent corps of teachers will be had here.

Right in line with the educational interests of Cardiff comes the information that one, and possibly two, churches will be built here this fall. The Cardiff Coal & Iron Co. will donate the lands and will aid in other ways in establishing churches. A Methodist church is already built here. A Baptist society is to be organized at once, and this denomination has quite a sum pledged for its work. There is a prospect of an Episcopal church being built soon, and there is also a strong possibility of a Union church being erected.

Work at the Cardiff mines continues with the same activity that characterizes all the operations of the Cardiff Coal & Iron Co. The daily output averages about 175 tons a day. New slopes are being driven with the intention of increasing the supply and all the ore the company can mine will find a quick market. The company is operating the saw mill at the mines, sawing all the timber used there.

The Cardiff exhibit at Detroit this week and last has proved in every a complete success. Many thousand people have inspected the samples of Cardiff's wealth, and have thus learned for the first time of the wonderful resources of this section of country. Of course only an idea of what exists here can be obtained in this way—a better insight can be had by personal inspection, and the excursion in October is a most appropriate time to visit East Tennessee and Cardiff.

The Detroit Free Press says: "Most visitors to the Detroit International Fair and Exposition did not expect to witness so interesting and unique an exhibit of timber, iron and coal as that made by the Cardiff Coal & Iron Co., of Cardiff, Roane county, Tenn. It is the only exhibit from the South, and has awakened more interest than any other exhibit on the grounds. It was a genuine surprise to many a Michigander, as few were aware that Eastern Tennessee is so bountifully stocked with such a variety of woods so well adapted for manufacturing purposes. The exhibit of coal and iron is exceptionally fine, and it demonstrates the fact that Cardiff is destined to be a great manufacturing center in a very short period of time. All the conditions essential to the production of iron cheaply exist there."

The Cumberland plateau, the upland territory of the Cardiff Coal & Iron Co., outside of its wealth in minerals, timber and land, possesses a feature that is rare in these times—it is abundantly stocked with

game of all kinds. Deer are very numerous, and the open season for this game is close upon us. A day's hunt on this field cannot fail to produce satisfactory results, for in addition to the deer there are lots of wild turkey, grouse, quail, rabbits, squirrels, etc., and the fault will be with the hunter if he fails in a grand day's sport. One can travel for miles in this country and not see a habitation or find anything to mar the wildness of the scenery. As the forests are full of game, so are the streams stocked with fish. It is truly a sportsman's paradise.

Tennessee and Union avenues are now being macadamized and put in the best of shape for travel. The roads about Cardiff will be a revelation to those acquainted with the character of the highways in their section of the country.

## Dallas Development.

DALLAS, TEXAS, September 1, 1890.

Editor Manufacturers' Record:

The great stream of capital and immigration continues to empty into Texas, and the predictions of some wise men about the future of this empire within itself promise to be realized in toto in the not far distant future. Prospectors are entertained in Dallas, often unawares, every week, and much of the time every day in the week, and business in every branch of industry shows a steady increase. The transfers in realty in August reached about \$1,000,000; the bank clearings were over \$8,500,000, and the postoffice receipts gave a showing of over 10 per cent. increase over August 1889. All this, too, in August, the dullest month in the year here.

The success attained by manufacturing enterprises in Dallas has before been alluded to in this correspondence, and the latest and most striking example on this line is the Texas Pressed Brick Co., which, after organizing and procuring a charter from the State to do business with \$100,000 authorized capital, began operations only last June. Mr. Thos. Field, an enterprising local capitalist, is president of the company, and Mr. C. F. Daughters is secretary. The enterprise was in the nature of an experiment in the start, and the company started with only one Lyon brick machine, the first introduced in this State. They succeeded beyond expectations and were soon warranted in adding another machine, and now they have decided to add two machines and thus double their capacity. Each machine turns out 30,000 brick per day. The product from the Lyon machine equals the facing brick turned out in St. Louis, and the Dallas company reports the demand for their brick practically unlimited. They are supplying brick for the \$500,000 hotel which is being erected here at \$20 and \$25 per 1,000, and about October 1st they say they will have about 3,000,000 brick ready for delivery, a large per cent. of which have already been placed. As stated above, the Lyon brick machine is introduced by this company for the first time in Texas, and Mr. Daughters, the secretary, informs your correspondent that it works admirably in Texas clay. Its success here, he says, has been demonstrated beyond a doubt. It gives perfect satisfaction. These machines are put in by the St. Louis Iron & Machine Works.

An excursion numbering 90 of the leading capitalists of New England is booked for Dallas October 25. They come to seek information regarding the development of Texas. They will spend four days in Dallas, the guests of the board of trade, and afterwards they will make a brief tour of the State.

The Boston gentlemen who organized the North Dallas Cotton Mills Co. are having plans prepared for the building required. The number of spindles to be used was increased to 30,000.

## Growth of Blacksburg, S. C.

BLACKSBURG, S. C., August 29, 1890.

Editor Manufacturers' Record:

Since your correspondent was here last spring Blacksburg has progressed steadily. A hotel of 90 rooms is up and nearly covered in. It occupies a beautiful site; it is a fine piece of architecture, and when finished, as it soon will be, it will be kept in first-class style.

New houses are going up in every direction, among them several that would be looked upon as remarkably handsome in much more pretentious places than this. The new woodworking establishment of Mr. Wm. Jones is crowded with orders, and so is the iron foundry. The east end of Whittaker's mountain has been laid out in beautiful streets and drives. Our electric-light system gives general satisfaction, and the plant is first-class. Our graded school trustees have secured the services of Prof. Sporsar, of Oxford, Md., who will soon open with every prospect of an unusually large attendance. Our magnetic and other iron ores are attracting much attention, and are in demand at improved prices. Our Magnetic Iron & Steel Ore Co. is in no hurry to move, knowing that it has any quantity of first-class ore at command, and that the demand for it will increase as soon as the Three C's Railroad is completed between this place and the Virginia coal fields, an event for which we shall not have to wait much longer, for the completion of the line, August 20th, between Johnson City and the State line of North Carolina, leaves only a short interval to be finished between there and Marion.

The branch line, so called, from Blacksburg to Augusta is being pushed by the contractors and will soon be finished. Practically, it will be a direct through route from the Ohio valley to that great cotton manufacturing city of Georgia, and will benefit every county through which it passes in Kentucky, Virginia and North and South Carolina, but no one locality will realize the manifold benefits that will accrue to Blacksburg, because this city will then be a center from which railroads will radiate to the North, the West, the South, and all the shipping points from Richmond and Norfolk to Wilmington, Charleston and Brunswick.

The water-powers of Broad river are attracting a great deal of attention, and will unquestionably be utilized in the near future on a scale commensurate with their magnitude and importance. To summarize, Blacksburg is going ahead steadily. Its people have faith in its resources, and are spending their own money in its development, content for the time being to do this, and to make money by hard work and by the utilization of what nature has given them. They are not of a speculative, but of a business turn of mind, and they see such growing prosperity in their midst that most of them are content with the present and hopeful for the future. The land and improvement company here, composed in about equal numbers of Southern and Northern men, has acquired large areas of valuable real estate that some day, I presume, will be put upon the market. This, however, is but a personal opinion, for the managers of the company obey that ancient injunction—"Let not thy left hand know what thy right hand doeth," and consequently those who are not in their secrets can only judge of their intentions by the work they are doing which cannot be concealed. J. L. B.

A PRACTICAL, experienced man with some cash is offered an opportunity in this issue by F. P. S. who will put \$25,000 in the business, to join him in the manufacture of furniture, coffins, etc., at a point in West Virginia where lumber is cheap and transportation facilities good.

COME and SEE  
the Riches of  
East Tennessee

LEAVING BOSTON SATURDAY AFTERNOON, OCTOBER 4th,

ARRIVING IN CARDIFF MONDAY, OCTOBER 6th.

The Visitors will have an opportunity for a stay of several days in

The Newest and Most Wonderful City of the South.

Further Particulars  
Announced at  
A Subsequent Date.

## Grand Excursion

TO  
**CARDIFF,**  
TENNESSEE.

The Cardiff Coal & Iron Co.

WILL RUN AN EXCURSION FROM

NEW ENGLAND  
TO CARDIFF,

*On Saturday, October 4th, 1890,*

Giving people a chance to see what has been done in a  
FEW WEEKS IN BUILDING A CITY.

This Company will not have any auction sale of lots.  
Parties desiring full information should address  
CARDIFF COAL & IRON CO., 4 Liberty Square, Boston.  
H. C. YOUNG, VICE-PRESIDENT, Cardiff, Tenn.  
M. M. DUNCAN, GENERAL MANAGER, Cardiff, Tenn.  
W. P. RICE, VICE-PRESIDENT, Quincy House, Boston.  
CORDLEY & CO., BANKERS, 121 Devonshire St., Boston.

The Opportunity  
of a Life.  
Don't Neglect It

THE MOST BEAUTIFUL SEASON OF THE YEAR.

TO SEE THE SOUTHLAND

EXCELLENT OPPORTUNITY

Special Excursion Trains

WILL BE RUN

From all Sections of the Country,

ARRIVING IN CARDIFF OCT. 6.



Tredegar offers the most inviting field in the United States for the establishment of manufacturing enterprises.

*It has Unequalled Advantages for*

Iron and Steel Works, such as Furnaces, Rolling Mills, Machine Shops, Foundries and everything using iron.

Car-Wheel Works, Car Shops.

Cotton Mills, Knitting Factories, and other Textile Industries.

Cotton-Seed Oil Mills and Fertilizer Factories.

Woodworking Industries of every sort, Saw and Planing Mills, Sash, Door and Blind Factories, Furniture Factories, Handle and Spoke Factories, Agricultural Implement Works, Carriage and Wagon Factories, &c.

Brick Works for making Building Brick, Vitrified Brick, Fire Brick, &c.

Sewer Pipe Works.

And many other industries.

The most liberal inducements will be offered to those who desire to locate such industries.

*The Best Location in the Country  
for New Enterprises.*

# TREDEGAR, ALA.

*Here Are Found :*

The finest Hematite Iron Ores in the South.

Extensive Manganese Deposits that experts from Pennsylvania and elsewhere believe to be the greatest in the United States.

Vast Forests of Fine Timber, Pine and many varieties of Hardwoods.

Never-failing Mountain Springs with a daily flow of many million gallons of the purest Freestone water, besides Sulphur, Chalybeate and other Mineral Springs.

A climate that has no superior for all the year; malaria is unknown, and the nights are cool even in midsummer.

A Fertile Agricultural Country, where cotton, grains, grasses, fruits and vegetables yield abundant crops, and where fine Jerseys wade knee-deep in clover.

A population of 3,000, churches of all denominations, excellent schools, charming society.

A National Bank, Water Works, Fine Hotel, &c.

Steel Works, to include Furnaces, Rolling Mill, Rail Mill, Cotton Tie Mill, &c., and to employ 3,100 hands, under construction.

A Cotton-Seed Oil Mill and Fertilizer Factory under construction.

For particulars address GOLDSMITH B. WEST, General Manager JACKSONVILLE MINING & MANUFACTURING COMPANY, Tredegar (Present Postoffice, Jacksonville), Alabama.

*An Unequalled Field for  
Profitable Investment.*

ity  
It  
EXCELLENT OPPORTUNITY  
ains  
try,  
CT. 6.

# LAREDO, TEXAS.

## The Gateway to and from the Republic of Mexico

Is nature's grand outlet for the manufactured products of the United States and nature's grand inlet for the mineral and raw products of Mexico. For the cheap delivery of the raw material necessary for the successful operation of iron and all textile industries, Laredo holds a position unsurpassed, every material being found in the immediate neighborhood. The very foundations of the city are upon inexhaustible coal beds, now being rapidly developed. A glance at the map will show that there are no large cities within hundreds of miles of Laredo, and her favorable geographical location, being from 600 to 800 miles nearer the trade centers of both republics than any other frontier port, stamps her as the commercial entrepot between the United States and Mexico.

Laredo is becoming a most important manufacturing point,

having the following industries already located and in operation:

Woolen Mill.  
Wool Scouring Mill.  
Tannery.  
Boot and Shoe Factory.  
Ore Concentrating Works.  
Ore Sampling Works.  
Cotton Gin and Milling Works.  
Mineral Water Bottling Works.  
Four Ice Factories.  
General Car and Machine Shops of the Mexican National Railroad, the largest west of the Mississippi.  
Three Large Brick-yards and several smaller establishments.  
A large Cotton Factory is now being erected by a New England syndicate.

Laredo Offers to the Capitalist, Merchant, Manufacturer and Mechanic Opportunities for Investment, Business or Manufacturing such as no other City in the Southwest can offer.

The city is well supplied with railroad facilities and hotel accommodations, has Holly system of water works, two electric-light companies and one of the best equipped electric motor street railways in the United States.

Population.		Imports and Exports.
1886.....	3,000	
1888.....	6,000	1888.....\$ 3,000,000
1889.....	12,000	1889..... 10,543,000

*For Maps Pamphlets, Bird's Eye Views and Reliable Information of Laredo, address*

## THE LAREDO IMPROVEMENT CO.



# KIMBALL.

MARION COUNTY,

TENNESSEE.

## KIMBALL TOWN COMPANY.

**H. I. KIMBALL,**
**Vice-Prest. & Managing Director.**
**DIRECTORS.**

HON. LOGAN H. ROOTS, President of First National Bank, Little Rock.  
 CHARLES P. RICHARDSON, Capitalist, Chattanooga.  
 J. R. STEVENS, President First National Bank, Huntsville, Ala.  
 A. J. MORISON, Capitalist, London, England.  
 J. H. BRYANT, President Seattle Coal & Iron Co., New York.  
 GEO. COOK, President Hallet & Davis Piano Co., Boston, Mass.

HON. H. L. COCHRAN, Judge Probate Court, Fort Payne, Ala.  
 H. I. KIMBALL, Atlanta, Ga.

**OFFICERS.**

President, HON. LOGAN H. ROOTS.  
 Vice-President, C. P. RICHARDSON.  
 Second Vice-President and Managing Director, H. I. KIMBALL.  
 Treasurer, J. H. BRYANT.  
 Assistant Treasurer, ED. E. RICHARDSON.  
 Secretary W. E. DONALDSON.  
 Assistant Secretary, W. BROOKS COVELL.

**ATTORNEYS.**

W. E. DONALDSON, Kimball.  
 SHEPHERD, WATKINS & BATES, Chattanooga.

**ENGINEERS.**

Landscape Engineer, NATHAN G. BARRET.  
 Resident Engineer, W. J. KELLY.  
 Sewerage and Electrical Engineers, NIER, HARTFORD & MITCHELL.  
 Hon. SAM'L H. BUCK, Gen. Superintendent.  
 OFFICES.  
 Richardson Building, Chattanooga.  
 Union Trust Building, 80 Broadway, New York.  
 Company's Building, Kimball, Tenn.

**Kimball Offers**

Solid, practical inducements to manufacturers. First-class enterprises under good management will be guaranteed, one-half the cash required. Local taxes will be remitted for a term of years. Lowest freights and cheapest raw materials will be secured.

**Auxiliary Companies**

will be organized by the parent corporation for developing the wealth of the Sequachee Valley and for supplying the city with heat, light, water, power and transportation.

**A Mammoth Industrial Building**

will be erected by the Kimball Town Company, which will have power, light and heat, that will be supplied to manufacturers on the most liberal terms.

Ample provision made for religious and educational institutions.

**No Further Auction Sales**

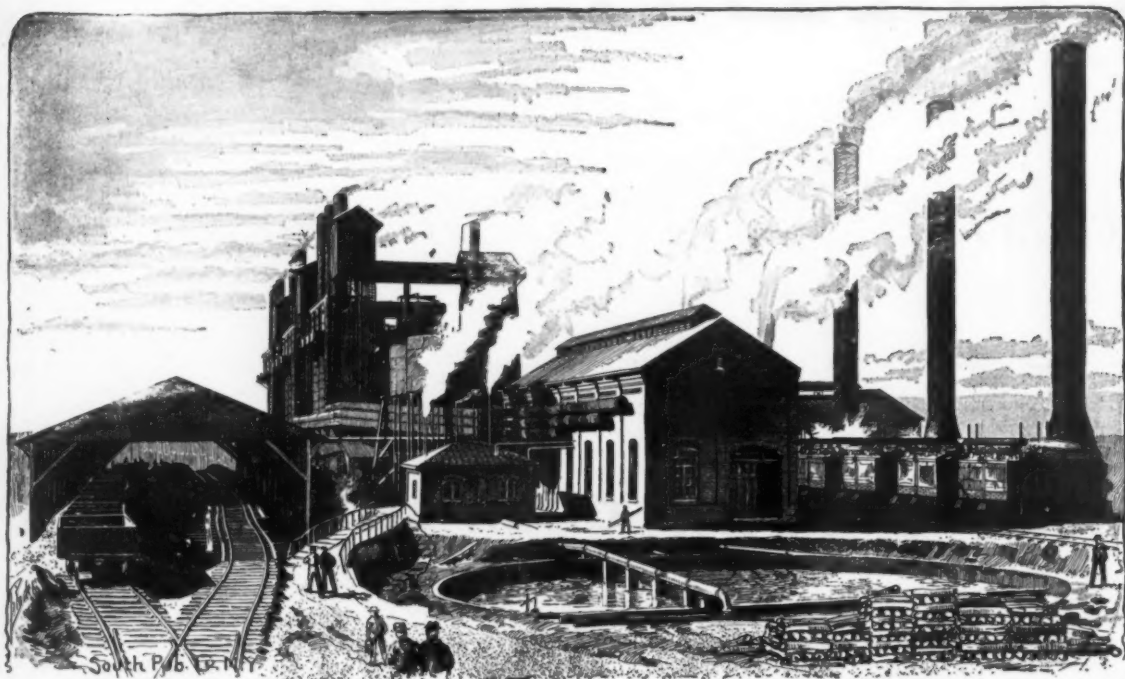
this year and no private sales of the corporation's lots except to those who will contract to build immediately on plans approved by the management.

ALL CORRESPONDENCE SHOULD BE ADDRESSED TO

**H. I. KIMBALL, Managing Director,**
**CHATTANOOGA, TENN.**

# SHEFFIELD, ALA.

## THE SUPERB.



At the Headwaters of Deep Navigation on the Tennessee River, the Hudson of the South.

The Largest Producer of HIGH-GRADE Pig Iron of any City in the Entire Industrial South.

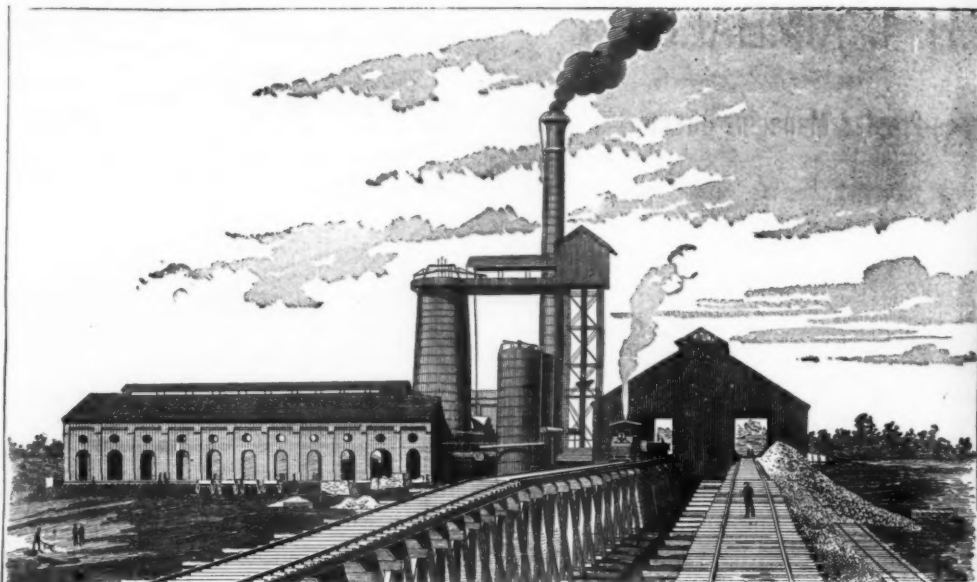
The only point in the South that has or can ship pig iron to the cities on the Mississippi, Missouri and Ohio rivers by boat or barge without rehandling. This last shipment of 5,000 tons of Pig Iron to Pittsburgh, Pa., by barge was made at a saving of \$2.65 per ton over what any iron-producing city of the South has done or can do to-day.

Five Large Blast Furnaces

Capacity 750 tons pig iron per day.

The following are among the corporate and private enterprises that belong to Sheffield:

The Sheffield Land, Iron & Coal Co., capital \$1,000,000.  
The Sheffield & Birmingham Coal, Iron & Railroad Co., capital \$1,000,000; the owners of three 150-ton blast furnaces.  
The Birm., Sheffield & Tenn. River Railway Co., capital \$5,000,000.  
The Hattie Ensley Furnace, capital \$200,000.  
The Lady Ensley Furnace Co., capital \$200,000.  
The Electric Light & Gas Fuel Works, \$50,000.  
The Sheffield Ice Co., capital \$25,000.  
The Sheffield Manufacturing & Constructing Co., \$30,000.  
The Sheffield Contracting Co., \$60,000.  
The Eureka Brick & Lumber Co., \$30,000.  
The Howard Brick Co.  
The Sheffield Bakery & Bottling Works.  
The Sheffield Mineral Paint Co., capital \$50,000.  
The Sheffield Agricultural Works, capital \$40,000.  
The Sheffield Cotton Compress Co., \$60,000.  
Millan Brothers, Steam Laundry.  
Enterprise Publishing Co.  
Water Works, already expended, \$30,000.  
Sheffield Street Railway Co., capital \$100,000.  
Cleveland Hotel Co., capital \$50,000.  
Sheffield Hotel Co., capital \$120,000.  
Bank of Commerce, capital \$150,000.  
East Sheffield Land Co., capital \$500,000.  
Hull & Keller's Fern Quarries.  
Mobile Real Estate Co., capital \$50,000.  
Sheffield Real Estate Co., capital \$50,000.  
Sheffield & Mobile Improvement Co., capital \$100,000.  
Sheffield Stove Works.  
Henderson Milling Co., capital \$100,000.  
Globe Iron & Brass Works, capital \$10,000.  
Standard Machine Shop & Foundry, capital \$50,000.  
Owen Pink Mixture Co., capital \$100,000.  
Bell Telephone & Telegraph Co.  
Foulds' Shoe Factory, capital \$20,000.  
Enterprise Wood Working Co., capital \$30,000.  
Huchanan Straw Goods Factory, \$25,000.  
The Sheffield Harness & Saddlery Co., capital \$20,000.  
Principal Shops of the Sheffield & Birmingham Railroad.  
Principal Shops Memphis & Charleston Railroad, now being built.



Aside from the foregoing the following are in course of construction and may be considered positive: Principal Shops of the Memphis & Charleston Railroad; Principal shops of the Nashville, Florence & Sheffield Division of the Louisville & Nashville Railroad. Reasonably certain to be secured in the near future are the following, in regard to which negotiations are pending: A Rolling Mill; Large Machine Shop; A Cotton Mill.

## ALABAMA'S IRON CITY.

The Superb Location at the head of navigation on the Tennessee River, commanding the outlet to immense fields of IRON ORE and COAL and magnificent tracts of the finest Timber. Has already attracted to the spot where three years ago in a cotton field her projectors set the stakes of a new city, capital and people, unequaled in amount and number, circumstances considered, by any of the so-called new cities of the South.

With eight Church Organizations, two Free Public Schools, Postoffice, Telegraph and Express offices and abundant facilities of transportation by river and rail. It has every advantage as a residence city that can be desired.

Good Water; Drainage Excellent; Health and Climate Unsurpassed. Free Public Schools and Churches. Splendid opening for men of push and energy. No better point for profitable investment. No "Old Foggy" element here.

### Sites for Manufacturing Enterprises

And for Free Public Schools and Churches

Donated by the Sheffield Land, Iron & Coal Company.

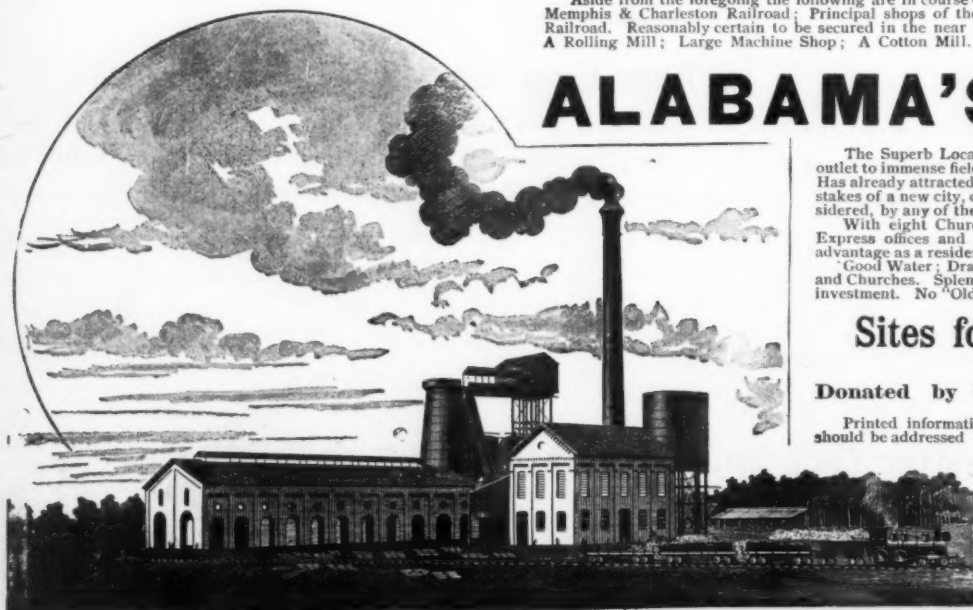
Printed information furnished on request. Correspondence solicited. Communications should be addressed

**W. L. CHAMBERS,**

Vice-President and Manager.

Sheffield Land, Iron & Coal Company,

SHEFFIELD, ALABAMA





# The Staunton Development Co.

## OF STAUNTON, VIRGINIA.

Authorized Capital \$2,000,000.

Shares \$100 par value each.

### OFFICERS

M. ERSKINE MILLER, President, Staunton, Va.

S. M. YOST, Vice-President, Staunton, Va.

W. P. TAMS, Treasurer, Staunton, Va.

W. J. PERRY, Secretary, Staunton, Va.

### DIRECTORS.

ISAAC WITZ, Staunton, Va.

B. F. EAKLE, Staunton, Va.

JOHN McQUAIDE, Staunton, Va.

ANDREW BOWLING, Staunton, Va.

S. M. YOST, Staunton, Va.

JED HOTCHKISS, Staunton, Va.

J. H. WAYT, Staunton, Va.

M. ERSKINE MILLER, Staunton, Va.

O. K. LAPHAM, Chicago, Ill.

H. H. FAY, Capitalist, 28 State Street,

Boston, Mass.

W. L. FLEMING, Richmond, Va.

GEORGE H. HULL, President American

Pig Iron Storage Warrant Company, 44

Wall Street, New York.

# STAUNTON, VIRGINIA.

The Queen City of the Valley of Virginia.  
Present Population 12,000.

Situated in Augusta county at the crossing of the Baltimore & Ohio and Chesapeake & Ohio railroads and accessible to the great coal and coke fields, namely: Connellsville, by the Baltimore & Ohio; Pocahontas or Flat Top by the Norfolk & Western and Chesapeake & Ohio, and New River Coke Fields by the Chesapeake & Ohio.

### PROPERTY.

The lands acquired, aggregating 2,242 acres, more or less, are favorably situated within the city limits and adjoining the corporation lines, and it might be fairly said that about 240 acres are situated within the city of Staunton. The great bulk of the property lies between the Valley Railroad or Baltimore & Ohio Railroad and the Chesapeake & Ohio Railway, and is most admirably situated for railroad switches and side tracks to reach manufacturing enterprises. Several streams of good water run through the lands, affording abundant water supply for factories and fine drainage.

### CAPITAL STOCK.

The authorized capital is two million dollars. One million, two hundred thousand dollars of stock will now be issued,

of which \$204,800 has been disposed of, leaving \$800,000 of stock in the treasury, to be hereafter issued, if it should be deemed wise to do so.

Subscribers will bear in mind that with every two shares of stock they will be entitled to either a business or residence lot, to be determined by a drawing at a date to be hereafter designated.

### BOOKS OF SUBSCRIPTION NOW OPEN.

Staunton is within six hours' ride from Washington, seven of Baltimore, nine of Philadelphia and eleven of New York.

It has an excellent system of water works, paid fire department, electric light and gas companies, ice factory, street car line under construction, four newspapers, handsome opera house, commercial college and other important industries that contribute to the welfare of the city.

# The Shenandoah Land & Improvement Co.

RESPECTFULLY

Calls the Attention of Manufacturers and Investors  
To the SUPERIOR LOCATION and FACILITIES

FOR MANUFACTURING PURPOSES, HOMES AND INVESTMENTS GENERALLY

NOW OFFERED AT

## SHENANDOAH, PAGE COUNTY, VIRGINIA.



SHENANDOAH'S NEW HOTEL.

### LOCATION.

The town is situated on the east bank of the Shenandoah river, in the world renowned Shenandoah valley, the climate and scenery being unexcelled in the most favored sections of the United States. 1,100 feet above sea level; malaria unknown, atmosphere clear and bracing.

### MINERALS AND TIMBER.

On both sides of the Shenandoah river, and immediately adjacent to Shenandoah, are immense tracts of land rich in iron, manganese, copper, lead, asbestos, slates, ochres, fire-clay, etc., of fine quality.

Vast bodies of timber lands, furnishing in endless quantity the finest oak, hickory, ash, maple, walnut, chestnut, elm and pine for manufacturing and decorative purposes.

### RAILROADS.

The Shenandoah Valley Railroad runs directly through Shenandoah, which will be the terminus of the Washington extension. The West Virginia Central Railroad, as projected, will pass through Shenandoah, opening up the immense mineral deposits of the Massanutten Mountains.

### PRESENT INDUSTRIES IN OPERATION.

There is a Furnace Company, producing 30,000 tons of foundry and mill iron annually. They also operate a foundry. The Shenandoah Valley Railroad have here their principal machine shops, car shops, blacksmith and boiler shops. There is a brick works and two planing mills.

### Improvements Decided Upon and Under Construction.

The Land and Improvement Company are building a large and commodious hotel, also a handsome office building. Plans are fully decided upon and work will soon begin on a water works, electric-light plant, water-power facilities, about one hundred dwellings, besides grading streets and laying sidewalks.

The Furnace Company have completed plans and will at once erect another Furnace and a rolling mill.

The Railroad Company will erect a handsome rough stone passenger station, a large freight house, new shops and a round house—doubling present capacity.

Many individuals are building residences and stores.

### INDUCEMENTS TO MANUFACTURERS.

The Shenandoah Land & Improvement Company are prepared to offer inducements to manufacturers to locate here, and will treat most liberally with any such who desire to establish industrial plants.

By special permission in the charter of Shenandoah, all manufacturers who may establish works here are exempted from corporation taxes for five years.

Possessing so many advantages of such varied character, together with the many improvements now fully decided to be established here, there is every reason to believe that, based on a conservative estimate, Shenandoah will have at least 10,000 inhabitants within the next three years.

FOR COPIES OF PROSPECTUS OR FURTHER INFORMATION, ADDRESS

J. F. WHEELWRIGHT, Secretary.

G. POWELL NOLAND, President.

PRINCIPAL OFFICE, SHENANDOAH, PAGE COUNTY, VIRGINIA.



# DENISON, TEXAS.

The "QUEEN" City of the Southwest,

— AND —

✱ GATEWAY ✱

— TO THE —

## GREAT STATE OF TEXAS.

The City of Denison presents the Finest Opportunity of any City in the Southwest for the Investment of Capital in Large or Small Sums.

**D**ENISON is situated in Northeastern Texas near inexhaustible beds of coal and iron, surrounded by the finest fruit lands in the world, and adjoining the INDIAN TERRITORY, which, in the nature of things, must in a few years be opened to settlement.

The growth of Denison has been a natural one, the city having reached its present size—16,800 population—in sixteen years.

The city is regularly and beautifully laid out. Railroads run from it in four different directions. The Missouri, Kansas & Texas alone does an enormous business, having 54 miles of switch track in Denison, employing 500 skilled workmen and disbursing \$150,000 a month in wages.

The first public school in the State was established here, and the city's elegant two and three story brick school buildings, surrounded by attractive grounds, are well arranged for the use of the white and colored children. Its schools are in session ten months in each year.

We have sixteen church societies, seven of which are colored.

The city is well supplied with pure water from its numerous private wells—dug in the ground—and its first-class system of water works, giving the citizens ample protection against serious loss by fire, and enabling the insurance companies to rate the city first class as to fire hazard. Rate of taxation low.

The city has four miles of street railway, and a six-mile motor railway; has two electric light companies and a telephone plant. It has an influential New England colony, and counts among its citizens people from every State in the Union.

A large hotel, to cost \$125,000, is to be erected here this year, and a large steel plant with \$2,000,000 of capital is contemplated.

30,000 bales of cotton were shipped from Denison in 1889. 200,000 baskets of strawber-

ries and several carloads of peaches and other fruits have been shipped to market this season.

The Denison Canning Co., capitalized at \$100,000, has one of the largest canning factories in the country.

A cotton mill company with a capital of \$500,000 is building a 25,000-spindle cotton mill.

The climate of Denison is magnificent, situated nearly 800 feet above sea level. In summer it is warm, but far cooler than many cities farther North, and from 6 P. M. until after sunrise it is always cool. The city is very healthy.

The capacity of the ice factory has been increased from a daily output of 15 tons to 30.

The Denison Land & Investment Co. is prepared to give every reasonable encouragement to manufacturers, and solicit correspondence from such manufacturers as contemplate coming into the Southwest to locate.

Address all communications to

## THE DENISON LAND & INVESTMENT COMPANY,

DENISON, TEXAS.

Paid-Up Capital, - - - - - \$1,200,000.

### OFFICERS:

W. P. RICE, President.

MILTON H. FRENCH, Vice-President.

B. J. DERBY, General Manager.

ARTHUR L. BERRY, Secretary and Treasurer.

### DIRECTORS:

W. P. RICE, Kansas City, Mo.  
J. M. FORD, Kansas City, Mo.  
SAM STAR, Denison, Tex.

B. J. DERBY, Burlington, Vermont.  
ARTHUR L. BERRY, Denison, Tex.  
M. V. B. CHASE, Augusta, Maine.

MILTON H. FRENCH, Thomaston, Maine.  
B. C. MURRAY, Denison, Texas.  
JOS. B. LINCOLN, Boston, Mass.

# \* LURAY, \* Virginia. \*

2,500 Acres Town Lands,

8,000 Acres Mineral Lands,

Luray Inn and Caverns.

## The Valley Land & Improvement Company,

Capital Stock, \$2,000,000.

Luray, Page County, Va.

### DIRECTORS.

D. F. KAGEY, Luray, Va., President.

G. C. MARSHALL, Uniontown, Pa., Vice-President and General Manager.

T. E. McCORKLE, Lexington, Va.

DR. W. L. HUDSON, Luray, Va.

G. K. MULLIN, Philadelphia, Pa.

DR. A. M. HENKEL, Staunton, Va.

J. W. MILLER, Mount Jackson, Va.

### EXECUTIVE COMMITTEE.

D. F. KAGEY,

G. C. MARSHALL,

T. E. McCORKLE,

G. K. MULLIN.

Secretary, T. E. McCORKLE.

Treasurer, H. M. KERR, Kagey & Co.'s Bank.

Attorney, T. E. McCORKLE.

Associate Counsel, H. J. SMOOT,

Manager of Inn and Caverns, G. K. MULLIN.

Bankers, D. F. KAGEY & CO., Luray, Va.

### CHARTER, PROPERTIES, &c.

The Valley Land & Improvement Company has been organized under the most liberal charter ever granted by the State of Virginia.

2,500 acres for manufacturing purposes and building sites. These lands are in and around the hotel, caverns and town of Luray on an undulating plateau, protected on either side by the Massanutten Mountain and the Blue Ridge Mountains.

8,000 acres of the best mineral properties in Virginia, consisting of iron, manganese and other valuable minerals which have stood the test of examination by the ablest geologists of the country.

The company owns the celebrated Luray Inn and the Luray Caverns.

Page County stands at the head of the list as having a greater variety of minerals and richer than any other county so far as known in the State.

In addition we have the finest kind and a great variety of virgin timber and fire-clays, slates, beautiful marbles, ochres, umber and mineral paints.

### LOCATION, RAILROADS, &c.

Luray, now a town of about 2,500, is the county seat of Page county, has five churches, splendid schools, fine stores, three newspapers, flouring mill, cigar factory, &c.

The town is on the Shenandoah Valley Railroad, of the Norfolk & Western system, and is the best location in Virginia, four hours from tidewater.

Two new lines projected connecting closely with Baltimore and Washington and insuring cheap freights.

Luray has largest tannery in the world, annual pay roll over \$350,000.

Inexhaustible water supply, agricultural resources, charming climate.

Fine natural sites for furnaces and manufactories of all kinds fronting the railroad, reserved by the company, which by donations of land and in every possible way will promote Luray's manufacturing interests.

### LOTS, CAPITAL STOCK, &c.

Capital stock \$2,000,000, shares \$100.

One million of stock reserved in treasury for betterment.

One million now offered for sale.

Books open at the bank of D. F. Kagey & Co., Luray, Va.

The company reserves the right to close the books any time before the full amount of the one million is sold.

Twenty per cent. must be paid on subscription, 20 per cent in 30 days, the balance equally in six and twelve months.

When half of the subscription is paid in subscribers have the right to use their stock in payment on lot purchases.

The company feels safe in saying that with the magnificent property in hand, the Inn and Caverns, it will be enabled when thoroughly under way to pay four or five per cent. dividend on the stock sold, independent of lots and mineral lands.

The company already owns an electric plant which will be considerably enlarged.

Complete system of water works and many other improvements projected. Investors are referred to Mr. J. W. Wheeler, Cashier Drivers and Mechanics' National Bank, Baltimore, Md., for full information. H. C. Turnbull, Jr., real estate agent, 52 Lexington street, will receive subscriptions of stock in Baltimore.

The fullest investigation invited.

THE VALLEY LAND & IMPROVEMENT COMPANY, LURAY, PAGE COUNTY, VA.



# BEDFORD CITY, VA.

(FORMERLY LIBERTY.)

The Most Beautiful Residence Portion of this Growing City is

## LONGWOOD PARK,

The Property of the Longwood Land & Improvement Co.

The property is within five minutes' walk of the N. & W. R. R. depot. It is intersected by broad, oak-shaded avenues, and divided into building lots averaging ninety feet front by 230 feet deep. A superb view of the beautiful Peaks of Otte visible from every part of the property. Prices range from \$6 to \$12 per front foot, according to location, &c.

No Better Investment can be made than in Lots in Longwood Park, at these Prices.

THE CITY HAS AN ESTABLISHED SOCIETY.

Churches, Schools and Academies, (among them the finest in the South,) Manufactures of many kinds, a magnificent supply of Free-stone Water, systems of Arc and Incandescent Electric Lighting, admirable Railroad Connections, a surrounding country of unlimited Mineral Resources and Great Fertility. For further information apply to

**R. KENNA CAMPBELL, Gen. Manager**

The Longwood Land & Improvement Company.

THE TWIN CITIES OF VIRGINIA.

# FRONT ROYAL AND RIVERTON.

The Phenomenal Success Attending the Inauguration of Industrial Development at the "Twin Cities" will be followed by Still More Astonishing Achievements in the Near Future.

A Number of the Best Known Manufactories in Virginia, Already Established and in Successful Operation, others Negotiating for Location.



Beautifully situated at the confluence of the two branches of the Shenandoah river, and at the junction of the two great Southern railroad systems, Front Royal and Riverton offer, among other advantages:

Splendid Railroad Facilities,

Magnificent Water Power,

Inexhaustible Beds of Ore,

Lumber and Hardwood in Abundance,

Good Schools, Society and Church Privileges.

Rich Agricultural Resources,

Picturesque Scenery,

Healthful Climate,

Proximity to Northern and Southern Markets.

Manufacturers seeking location and capitalists seeking investment are invited to investigate the claims of these towns, the most progressive in Northern Virginia. For illustrated prospectus address

H. H. DOWNING, Prest.

C. H. BEATY, Secretary,

**FRONT ROYAL & RIVERTON IMPROVEMENT CO.**

FRONT ROYAL VIRGINIA.

# BUENA VISTA, VA.

The Growing Manufacturing City  
of the Valley.

FREE SITES FOR INDUSTRIAL ENTERPRISES.

THREE GREAT RAILWAY SYSTEMS

*The Baltimore & Ohio, Chesapeake & Ohio and Shenandoah Valley connect it with the principal markets of the country.*

## ITS ADVANTAGES ARE:

An unsurpassed climate; splendid water-power; a fine system of freestone water, which is conducted through the town in water mains, and its picturesque scenery.

### UNLIMITED QUANTITIES OF SUPERIOR IRON ORES AT ITS DOORS.

With these advantages it commends itself at once to the consideration of those desiring to locate industrial enterprises where raw material is at hand and plants can be economically operated and a ready market in easy communication for its products.

### ITS RECORD FOR ONE YEAR.

Four hundred resident and business houses; a fine system of water mains and sewers; electric light; two banks; two churches, two schools, one public, the other a female seminary, and a population of 2,050 souls.

## INDUSTRIES SECURED.

Iron Furnace—almost completed.....	\$300,000
Pulp and Paper Mills—completed.....	85,000
Saddle and Harness Factory—in operation.....	10,000
Fire Brick Works—in course of construction.....	100,000
Steam Tannery—in operation.....	
Planing Mills and Lumber Yard—in operation.....	20,000
Furniture and Chair Factory—completed.....	20,000
Red Brick Works—in operation.....	30,000
Wise Wagon Works—in operation.....	25,000
Wire Fence Factory—in operation.....	10,000
Woolen Mille—in course of construction.....	70,000
Electric Light Plant—in operation.....	10,000
First National Bank of Buena Vista—in operation.....	50,000
Buena Vista Building & Investment Company, Bankers—in operation.....	81,800
Buena Vista Building & Improvement Company—in operation.....	80,000
Buena Vista Advocate and Job Printing Office—in operation.....	5,000
Egg Crate Factory—organized.....	50,000
Lexington Investment Company—in operation.....	50,000
Virginia Real Estate Investment Company—in operation.....	100,000
Basic Steel Works—organized and ready for construction.....	300,000
Three Livery Stables—all in operation.....	10,000
Engine and Boiler Plant—organized.....	300,000
Power Distributing Plant—being organized.....	40,000
	<b>\$1,736,800</b>



# MIDDLESBOROUGH,

## KENTUCKY.

### There Are Now Under Contract:

A Basic Steel and Iron Plant, daily capacity 300 tons, to cost \$1,000,000 and to employ about 1,000 hands.  
 An Iron Rod Mill; A Sheet Mill; A Nail Mill.  
 Two Coke Iron Furnaces, 150 tons daily capacity each, and one Charcoal Furnace.  
 A \$500,000 Tannery—the largest in the world  
 Fourteen Coal Mining Enterprises, to employ about \$2,000,000 capital.  
 A Dozen Wood-Working Enterprises.  
 A Twelve-Mile Belt Railroad.  
 Tile Works, Fire and Building Brick Works, and a dozen or more other enterprises.

## \$18,500,000

### Already Invested in the Development of Middlesborough.

Since the above announcement was made, Mr. A. A. Arthur, the manager of the company, has returned from London, where he secured an additional **\$8,000,000** to be invested in Middlesborough enterprises.

The capital of the Water Works Company has been increased from \$200,000 to \$750,000.

The capital of the Electric Street Railway Company has been enlarged to \$250,000 and the proposed lines extended so as to cover all the principal streets.

The length of the Belt Railroad has been increased to 20 miles, and the whole line will be in operation in a few weeks.

The money has also been secured for an extension of the Knoxville, Cumberland Gap & Louisville Railroad through the tunnel into Middlesborough. There is now under negotiation a lease of railway systems, of which the Knoxville, Cumberland Gap & Louisville road will form a link, giving Middlesborough trunk line connection with Chicago, Cincinnati, Louisville, Atlanta, Charleston, Savannah and Pensacola. Arrangements are also being made for direct connection between Cumberland Gap and some point on the Atlantic coast, and following this will be the establishment of a line of steamers between that point and Liverpool.

\$400,000 has been secured for the Middlesborough Coal and Iron Bank, which is now a regular department of the American Association's business.

The entire capital of the Cumberland Gap Park Company, \$1,800,000, has been secured in London. Contracts

have been let for the magnificent hotel, casino, sanitarium and other buildings.

The Middlesborough Hotel Company's capital has been increased. The company is now making an addition to its present building at a cost of \$25,000. Contract has been let for new hotel with ball room, casino and all the attractions and appointments of a first-class house, to cost \$75,000.

Contract has just been made for a new office building for the American Association, to be of stone and to cost \$35,000. A new office building will also be put up for the Middlesborough Town Company, the material to be stone and brick.

The Ousiotto Building Company, with a capital of \$250,000; the Manchester Building Company \$200,000; the St. Helen's Building Company \$200,000, and the New South Building and Loan Company with \$100,000, have been organized.

The eminent engineer, Mr. George E. Waring, Jr., of Newport, R. I., has been given the superintendency of contracts for a system of sewerage for Middlesborough and for the continuation of the work of straightening the stream that flows through Middlesborough. These improvements will cost \$150,000.

Mr. Arthur completed plans for a residence town at Cumberland Gap in connection with the American Association's developments. The amount secured for this purpose was \$750,000. The laying out of these lands has been given to Mr. George E. Waring, Jr.

The Watts London Iron and Steel Syndicate will increase its capital to £1,500,000 (\$7,500,000) and build other industries in addition to those already announced. Of the two furnaces now building the first will blow in early next October, and the second in November. Two other furnaces will be let to contract January 1.

Parties from Manchester, London and Liverpool will attend the May auction sales at Middlesborough, and will come with \$500,000 to invest in Middlesborough lots. Other parties are coming to form subsidiary companies to operate at Middlesborough in addition to those enumerated above.

The Northern American Association has been formed with a capital of \$3,750,000 to develop 200,000 acres of Kentucky coal lands; also the Anglo-American Association, with capital of \$2,000,000, to develop 80,000 acres of Kentucky coal lands, and the Western American Association, with capital of \$3,000,000, to develop 150,000 acres of coal and iron lands in Tennessee.

Counting the new enterprises arranged for on this trip and the additions to the capital of such as had been already announced, Mr. Arthur has secured nearly \$8,000,000 to be invested at Cumberland Gap. This is **\$8,000,000 of new money to be added to the millions already invested.**

Thus the Amount of Capital now Invested in the Development of Middlesborough reaches

## \$26,500,000.

Besides this, the three coal and iron companies mentioned above, whose aggregate capital is **\$8,750,000**, are closely allied to the American Association and the Middlesborough Town Company, and their developments will be made to contribute to the growth of Middlesborough.

The history of the world does not show an instance of

such amazing development in so short a time, and on so sure and solid and permanent a foundation.

A year ago the population of the present site of Middlesborough did not exceed 50; to-day the town has a population exceeding 5,000. It is a conservative estimate to say that in three years 50,000 people will be living here.

**MIDDLESBOROUGH TOWN CO., Middlesborough, Kv.**

# STANDARD LAND CO

Catlettsburg, Ky., U. S. A.

Dealers and Brokers in Mineral and Timber Lands.

**WE OFFER FOR SALE THE FOLLOWING DESIRABLE PROPERTIES.  
RICH IN IRON ORES, CANNEL, BITUMINOUS AND NATURAL  
SMELTING COALS, LIMESTONES, FIRE-CLAYS AND OTHER  
MINERALS AND TIMBER.**

No. 40.—16,000 acres, Laurel county, Ky., from 3 to 9 miles from L. & N. R. R.

No. 41.—35,656 acres, Jackson county, Ky., on Rockcastle river, 3½ miles above Livingstone, a station on L. & N. and Kentucky Central Railroads.

No. 43.—46,000 acres, Powell county, Ky. K. U. R. R. runs through this tract for 11 miles.

Nos. 45 and 46.—Aggregating 1,202 acres, Boyd county, Ky., ½ mile from C. & O., N. N. & M. V. and O. & B. S. Railroads and Ohio river.

No. 47.—13,561 acres, Jackson and Lee counties, Ky., 10 miles from Louisville Southern R. R.

No. 50.—63,070 acres, Morgan county, Ky. Three recent surveys of different railroads have been made through this land.

1,593 Acres Cannel Coal Rights in Johnson county, Ky. Lands border on Big Sandy river. O. & B. S. R. R. runs within 200 yards of some of it, and "Three Cs R. R." will pass through most of it.

No. 60.—5,000 acres, Logan county, W. Va., on Tug Fork Big Sandy river. N. & W. R. R. now being constructed through this tract.

No. 61.—6,000 acres, Clay county, W. Va.

No. 62.—5,434 acres, Braxton county, W. Va.

Nos. 78 and 79.—Aggregating 19,750 acres Botetourt county, Va., on opposite side Craig's creek, and bordering on same, from New Castle, and the Craig's Creek Mineral R. R., now being constructed.

No. 80.—10,250 acres, Botetourt county, Va., adjoining tract 78.

No. 100. 45,144 acres, Fentress and Scott counties, Tenn., about 5 miles from Cincinnati Southern R. R.

No. 101.—30,000 acres, Cumberland county, Tenn., between towns of Rockwood and Crossville, Crab Orchard mountain; within 5 to 10 miles from C. S. R. R.

No. 125.—100,000 acres PINE land, in Holmes, Washington and Calhoun counties, Florida. Two railroad surveys and Coctawhatchee river runs through tract.

Also other properties, including Coal Mines in operation, Mineral Paint Lands, Flour Mills, etc.

*Write for plats, topographical charts, civil and mining experts report and full printed descriptions of property.*

## EDMONDS & ROBINSON,

In the development of its agricultural, mineral and timber resources; in its general upbuilding and advancement, Texas is making more rapid progress than any other State in the Union. Its population is increasing at a stupendous rate. Millions of dollars from the West and Northwest, from the New England States and from England are pouring into the State for investment in factories, mills, railroads and commercial enterprises.

San Antonio is the commercial and financial center of the great South and Southwest Texas. It is a city of 55,000 population, is the center of the most important railroads in the State, has four national and five private banks, building and loan associations, a large number of industrial establishments and some of the largest jobbing houses in the Southwestern States.

### LAWYERS

AND DEALERS IN

## REAL ESTATE

In the matter of homes it is the handsomest city in America.

In twelve years it has grown from 20,000 to 55,000.

It is growing more rapidly now than at any former period.

Property in and around San Antonio and throughout Southwest Texas is increasing in value every day. *It will never again be as cheap as it is now.*

There is no place in the world offering greater inducements for the purchase of real estate, either for investment or speculation, with assurance of such large and certain profits.

**SAN ANTONIO,  
TEXAS.**

B. R. HUTCHKRAFT, Prest.

A. GATLIFF, Vice-Prest.

D. C. EAVES, Sec'y and Treas.

## THE SOUTHLAND INVESTMENT CO. REAL ESTATE, STOCK & BOND BROKERS

Room 45 Deaderick Building,

P. O. Drawer 6.

KNOXVILLE, TENN.

### OUR BUSINESS.

We Buy and Sell on Commission Real Estate, Stocks and Bonds.

Organize Companies to handle Mineral and Timber Lands

Report upon Costs of Mine Equipments, including Tramways and Railways, Maps and Profiles Furnished. Reports upon Value of Lands and Abstracts of Titles Furnished.

Act as Agents for Local and Non-resident Property-holders to Collect Rents and Sell Property.

Come and see us; if we do not have what you want we will get it for you.

List your property with us.

## JOHN C. FIELD, REAL ESTATE, TREDEGAR, ALA.

Information cheerfully given relative to the proposed improvements to be made in Tredegar, Ala., a town with accomplished realities and not possibilities only. I can offer some property during the summer months at a minimum figure, when considering the certain enhancement of values that is sure to follow. A Steel Plant, giving employment to 3,000 hands, is assured. This plant alone, when taken with the present established population of 2,500, represents a city in excess of 10,000 souls. Other industries of equal importance are guaranteed in additional. Address

JOHN C. FIELD, Tredegar, P. O. Jacksonville, Calhoun Co., Alabama.

## REAL ESTATE —FOR— Investment or Speculation.

One of the Most Solid and Substantial of all the Southern Towns is

### BRISTOL, TENN.

It is in the center of the richest mineral, timber and agricultural sections of the South—East Tennessee and Southwest Virginia.

It is becoming an important railroad center.

It has now a population of 10,000, which is increasing every day.

It has in the HOTEL FAIRMOUNT one of the handsomest and most thoroughly equipped hotels in the South.

It has in operation car shops, planing mills, foundries, woolen factory, cotton factory, carriage factory, veneer factory, canning factory, planing mills, brick-yards, &c. An iron furnace to cost \$300,000 has been contracted for.

The climate of Bristol makes it a natural sanitarium the year round.

There is no better place in the South for profitable real estate operations.

Some of the best business, residence and suburban property in the town is controlled by

**W. A. R. ROBERTSON,  
Real Estate Agent.**

Write to him for details. He is giving particular attention now to two or three special things that will pay big profits on short turn.

"The MANUFACTURERS' RECORD is the Most Widely-Quoted Industrial Paper in the World."



# DENISON,

TEXAS.

THE  
Future Manufacturing and Commercial Center  
OF THE  
GREAT SOUTHWEST.

## DENISON SUPPLIES THE COAL FOR TEXAS.

She has at her gates the only **COKING COAL** of any value in the Mississippi Valley. To the Southwest lies the best **MAGNETIC IRON ORE** in the world, while to the north and Southeast are fields of **BROWN HEMATITE ORE** of the finest grade. These ores must meet the **COKE** and **COAL** at **DENISON** and there to be worked.

**DENISON** cannot be surpassed for **HEALTHFULNESS** and **BEAUTY** of location. Six divisions of railways terminate at Denison and are operated by her citizens.

**DENISON** has an abundant supply of pure, soft water and plenty of good, cheap **BUILDING MATERIAL**.

The attention of investors and those seeking advantageous locations for business or for manufacturing plants is invited to the opportunities presented at Denison.

**MUNSON & BRO.** HAVE SUPERIOR FACILITIES FOR THE SAFE AND PROFITABLE INVESTMENT AND HANDLING OF CAPITAL.

For information about **DENISON** and for bargains in **BUSINESS** and **RESIDENCE PROPERTY**, **ACRE PROPERTY** and **FARMS NEAR THE CITY**, write or call upon

## MUNSON & BRO.

301 WOODWARD STREET,

DENISON, TEXAS.

# Six Trunk Line Railroads at BESSEMER

In the heart of Mineral Alabama, encircled with hills of Coal, Iron and Limestone Rock.

"The South is the coming El Dorado of American adventure. May the Almighty speed and guide her onward progress!" So wrote the Hon. W. D. Kelley, M. C., of Pennsylvania, a few months ago and every day brings forth new evidence to prove the correctness of his prediction and to show that without a doubt the South is to be the richest country upon the globe. In climate, soil, mineral and timber wealth, in rivers large and small, in a long seacoast, in abundant rainfall, in healthfulness and in every other advantage that could be asked nature seems to have done her best for this favored land. The wealth in iron and coal is beyond estimate. Of timber there is an unlimited supply, including nearly every variety of hardwoods for woodworking purposes.

WHERE  
MONEY  
WILL  
GROW!

Seven Furnaces, output 1890, 250,000 tons; Rolling Mill, 100 tons daily; Fire Brick Works, 25,000 daily; Many Lesser Industries

Offers Thirty Varieties of Hardwoods for Woodworking Industries.

11,000 City Lots For Sale.

The Bessemer Land & Improvement Co.

this new year, are prepared to deal liberally for the founding of Iron and Woodworking industries in this growing Mining and Manufacturing Center.

H. F. DeBARDELEBEN, Prest.

H. M. McNUTT, Secretary.

## THE PLACE FOR FACTORIES.

# THE ROANE IRON CO.

WILL BUILD UP A

\* LARGE MANUFACTURING CITY \*

AT

# ROCKWOOD, TENN.

AND IS PREPARED TO OFFER SUBSTANTIAL INDUCEMENTS TO MANUFACTURERS.

—AS TO RESPONSIBILITY OF THIS COMPANY, PARTIES ARE REFERRED TO EITHER DUNN OR BRADSTREET.—

FOR PARTICULARS ADDRESS

ROANE IRON CO., Rockwood, Tenn

# FOR SUCH INDUSTRIES AS

COTTON MILLS,  
WOOLEN MILLS,  
TANNERIES,  
BOOT AND SHOE FACTORIES,  
HARNESS AND SADDLE FACTORIES,  
FURNITURE FACTORIES,  
CARRIAGE AND WAGON FACTORIES,  
FLOUR MILLS,  
GRIST MILLS,  
CRACKER FACTORIES,  
CANNING FACTORIES,  
COTTON-SEED OIL MILLS,

# DALLAS, TEX.

Is equal to any locality  
in America in its  
combined advantages of

CHEAP AND  
ABUNDANT  
RAW MATERIAL  
READY,  
PROFITABLE  
AND EXPANDING  
MARKET.

DISTRIBUTING FACILITIES,  
ELIGIBLE SITES,  
GOOD CLIMATE.

Any worthy industries  
will be aided liberally by the

## DALLAS MANUFACTURERS' AID & IMPROVEMENT CO.

711 Main Street, Dallas, Texas.

## BEDFORD CITY LAND & IMPROVEMENT CO.

# BEDFORD CITY, <sup>LAT</sup> LIBERTY, VA.

By special act of the Legislature of Virginia the Bedford City Land & Improvement Company was chartered with the most liberal grants of power. The company has been fully organized.

AUTHORIZED CAPITAL - - - \$1,000,000.

JAS. M. BERRY, (of Berry Bros., Tobacconists,) President.  
R. B. CLAYTOR, (of R. B. Claytor & Co., Merchants) Vice-President.  
J. LAWRENCE CAMPBELL, (of Burks & Campbell, Attorneys-at-Law,) Secretary.  
S. M. BOLLING, (of Bolling, Wright & Co., Tobacconists,) Treasurer.

#### BOARD OF DIRECTORS:

MARTIN P. BURKS,	R. B. CLAYTOR,	J. M. BERRY,
C. W. WHARTON,	J. LAWRENCE CAMPBELL,	T. D. BERRY,
S. M. BOLLING,	SAMUEL GRIFFIN,	W. W. BERRY,
DR. W. W. SMITH, President of Randolph-Macon College,		
REV. A. E. DICKINSON, D. D., Editor of the Religious Herald, Richmond, Va.		

The Company is solvent and its business is conducted on the soundest business principles. It is not engaged in wild booming.

Only \$300,000 worth of stock has been offered to the public.

The Company owns nearly 800 acres, containing the best residence, business and manufacturing sites. The stock which is offered is in ten-dollar shares, payable \$2 per share cash when subscribed, \$1 each thirty days thereafter, until \$5 is paid on the share. For this the Company issues paid up non-assessable certificates of stock. The money thus raised is to be applied to the improvement of the property.

Bedford City is not an old field, but a thrifty, growing community, in the most healthful and beautiful mountain region in Virginia.

Mean yearly temperature 53.7; Winter, 44; Summer, 78.

A few miles from the peaks of Otter, it would be difficult to exaggerate the exquisite beauty of the scenery and the tonic quality of the atmosphere. Within a days ride of Boston, New York, Philadelphia, and a few hours from Baltimore, it presents unusual advantages for health seekers.

The present population is nearly 4,000. There are 30 manufacturing enterprises, large and small, in operation, and 10 new secured with capital provided, which go into work as soon as buildings can be put up and the plants erected.

On the Company's lands are the elegant Randolph-Macon Academy, the largest school for boys in the South, and the Jeter Memorial Institute for young ladies, which will be commenced within six months. The Norfolk & Western R. R. Co. will build a fine passenger depot near a first-class hotel, to cost \$75,000. Poindexter, the architect of the Academy, is now preparing plans.

The Bedford City Company offers the most beautiful residence sites in the western part of the town, in which direction it is rapidly building.

This is the safest and best investment offered anywhere in Virginia. It is a golden opportunity to get property in a splendid section, as rich in minerals as it is healthful and magnificent in the grandeur of its mountains.

A new railroad from Glasgow to Atlanta will be built. Its construction will begin this year. For further particulars address

J. M. BERRY, President of Bedford City Land & Improvement Co., Bedford City, Va.





## Buy the Best Stock on Sale in Virginia.

### The Grottoes Company

owns 25,000 acres of the best Iron and Timber lands, and 5,000 acres of unsurpassed City Site lands, or 30,000 acres all in one body, including the famous Weyer and Fountain Caves, the noted Grottoes Hotel, a large Electric-Light Plant, two good Water Powers, twenty-five Brick and Frame Houses, a thousand acres of native forests in parks, etc., etc. It now offers 15,000 Shares of its stock (par value \$100 at \$50 per share. The buyer of 5 shares of stock will be allotted a good city lot, not less than 25x120 feet in size, without charge; and the buyer of 25 shares of stock will be allotted 5 city lots and one villa lot without charge.

Go and see the property, where the City of Shendun is now being laid out, at The Grottoes, Shenandoah Valley Railroad, Augusta and Rockingham counties, Va., and you will agree that *nothing yet offered compares with it in intrinsic value.*

For prospectus, maps and information, address The Grottoes Company, Staunton, Va., or The Grottoes, Va.

**Jed. Hotchkiss, President,**  
**Staunton, Va.**

**Maslin's Patent Steam Pump.**

Pat. Feb. 12, &amp; Dec. 3, '99.

Cheapest and Best Automatic Steam Vacuum Pump Handling DIRTY and GRITTY LIQUIDS without Wear, Oil or Care. Simple, Economical, Efficient & Durable. Pumping Plants for Contractors, Irrigation, Water Works, Railroads, Mining & General Hydraulic Purposes. Write or call for Circulars. JOHN MASLIN & SON, SOLE MANUFACTURERS, 255-267 3rd St., Jersey City, N. J.

**COMPLETE STEAM PUMP**

10 SIZES FROM \$7 TO \$75

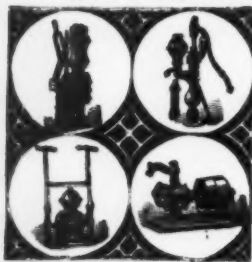
FOR DRIVEWELLS & ETC. WRITE FOR PRICES AND DESCRIPTIVE CIRCULARS. VAN DUZEN & TIFT SOLE MAKERS CINCINNATI, O.

**THE BUFFALO STEAM PUMP CO.**

BUFFALO, N.Y. — MANUFACTURERS OF

**STEAM PUMPS**

FOR ALL DUTIES.

**THE DEMING COMPANY,**

(Late Silver &amp; Deming Mfg. Co.)

**PUMPS**

For Hand and Power.

WELL SUPPLIES AND TOOLS,

SALEM, OHIO.

**LAWRENCE MACHINE CO.**

MANUFACTURERS OF

Centrifugal Pumps,

STEAM ENGINES,

General Machinery,

PHOS. BRONZE,

And Composition Pumps and Valves for

Pulp and Paper Mills,

LAWRENCE, MASS.

Send for Catalogue A and Disc'ts.

**ALLENTOWN FOUNDRY & MACHINE CO.**

ALLENTOWN, PA.

**OF THE IMPROVED EUREKA TURBINE**

FOR ECONOMY OF WATER WITH GREATEST EFFICIENCY

**"THE BEST IN THE WORLD"**

REPEATED TESTS AT HOLYOKE, MASS. GIVE IT 5 PER CENT

GREATER EFFICIENCY THAN ANY OTHER

WHEEL TESTED THERE. ITS USE IN MINING DISTRICTS

WITH SMALL AMOUNT OF WATER AND HIGH HEAD IS OF

THE GREATEST ADVANTAGE. OVER 800 NOW IN USE

SEND FOR CATALOGUE RUNNING MILLS, FURNACES, WATER WORKS, FACTORIES, MINES, ETC.

**RODNEY HUNT MACHINE CO.**

ENGINEERS, MACHINISTS, IRON and BRASS FOUNDERS,

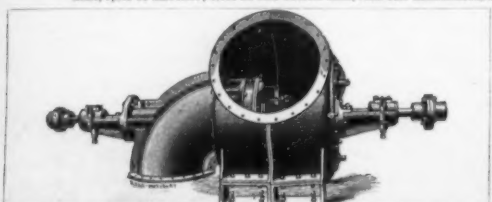
**Turbine Water Wheels**

VERTICAL AND HORIZONTAL.

IRON FLUMES and PENSTOCKS, HEAD GATE GEARING, REGULATORS, and everything pertaining to Water Wheels and Mill Work.

These Wheels are Superior for High Power and Efficiency, Excellent Workmanship and Great Durability. Tight Closing Gate; Easily Operated.

Used in many of the largest manufacturing establishments in the United States. 6,000 horse-power furnished one mill, 7,200 to another, 2,000 in one cotton mill, and one manufacturer 76 wheels. All now running.



54 in. wheel tested in mill after running two years	8420
36 in. wheel at Holyoke Testing Flume	8514
30 in. wheel at Holyoke Testing Flume	9050
30 in. wheel at Holyoke Testing Flume (another wheel)	8789
30 in. (dean wheel) at Holyoke Testing Flume	8461

**PART GATE.**

30 in. wheel at Holyoke Testing Flume.	
Proportional quantity of water, 765, one-half gate opening	7843
Proportional quantity of water, 287, one-third gate opening	7283

Boston Office 70 Kilby Street.

Catalogue Free.

ORANGE, MASS.

**REVERSIBLE YERS STEEL and WOOD TRACK HAY CARRIERS**

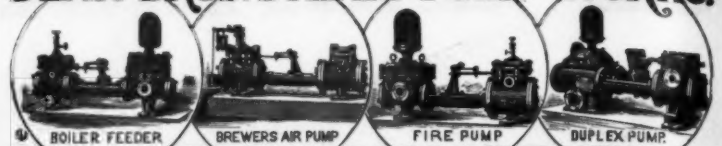
TRADE MARK. A complete outfit. Easy to put up, always reliable and fully warranted to meet the wants of any farmer.

BEST HAY TOOLS IN THE MARKET.

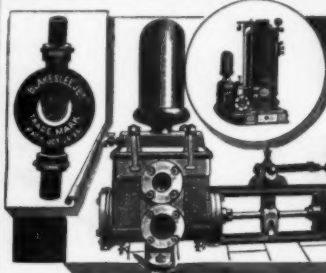
**MYERS' FORCE AND LIFT PUMPS**

Simple, durable, powerful, easy to operate never affected by frost. Patent GLASS VALVE will never corrode. Ask your dealer for our goods. Write for catalogue. F.E. MYERS & BRO. ASHLAND, O.

Subscribe to the MANUFACTURERS' RECORD. Price \$4.00 a year, or six months for \$2.00.

**DEAN BROS. STEAM PUMP WORKS.**

BOILER FEEDER BREWERS AIR PUMP FIRE PUMP DUPLEX PUMP  
PUMPING MACHINERY FOR ALL PURPOSES. INDIANAPOLIS, IND. SEND FOR CATALOGUE AND PRICES.

**BLAKESLEE MFG. CO.**

DU QUOIN, ILL.

SEND FOR CATALOGUE

**STEAM PUMPS.**

We have just issued a new illustrated catalogue of our Steam & Jet Pumps. A copy will be mailed free on application.

**THE LAIDLAW & DUNN CO.****GEO. F. BLAKE MFG. CO.**

BUILDERS OF STEAM AND POWER



111 Federal Street, Boston.

95 and 97 Liberty St., N. Y., 535 Arch St., Philadelphia.

**The Baldwinsville Centrifugal Pump.**

OLDEST, BEST AND LATEST IMPROVED.

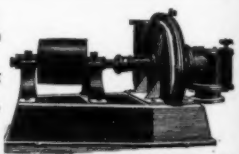
Especially adapted for contractors' use, Pumping

Coffer Dams, Sewers, Sand-Pumping, etc.

Irrigating Plants a Specialty. Address for catalogue,

IRVIN VAN WIE, 48 &amp; 50 West St., Syracuse, N. Y.

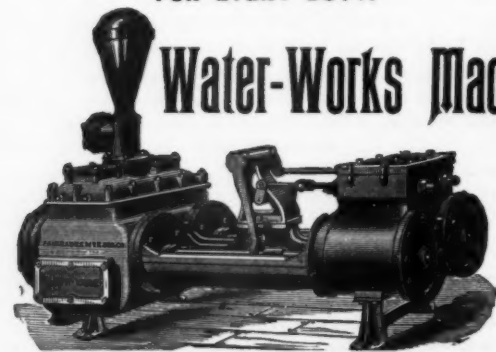
Established 1861. Removed to Syracuse 1881.

**The Improved Smith & Vaile**

— SINGLE, DUPLEX AND COMPOUND —

**Steam Pumps**

FOR EVERY DUTY.

**Water-Works Machinery.****The SMITH & VAILE CO.**

DAYTON, OHIO, and NEW YORK,

112 LIBERTY STREET.

EASTERN and SOUTHERN AGENTS:

THOS. K. CAREY & BROS., 26 Light Street, - - BALTIMORE, MD.  
G. W. STORER, 149 North Third Street, - - PHILADELPHIA, PA.  
D. A. TOMPKINS CO., - - CHARLOTTE, N. C., and ATLANTA, GA.

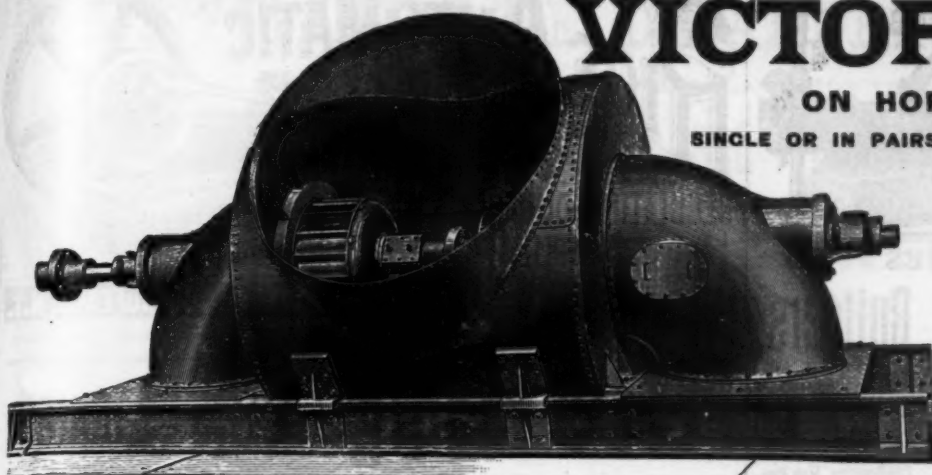


# VICTOR TURBINE

ON HORIZONTAL SHAFT.

SINGLE OR IN PAIRS.

DISPENSING ENTIRELY WITH GEARS.



Actual Test of the VICTOR in Testing Flume, Holyoke, Mass.

Size of Wheel.	Head in Ft.	Horse Power.	Per Ct. Useful Effect.
15-inch	18.06	30.17	.8932
17 1/2-inch	17.96	36.35	.8930
20-inch	18.31	49.00	.8932
25-inch	17.99	68.62	.8934
30-inch	11.65	52.54	.8976
35-inch	17.39	133.19	.8497
40-inch	16.49	148.93	.8453
48-inch	15.31	179.29	.8202

VICTOR WATER WHEELS, UPRIGHT OR HORIZONTAL, FURNISHED ON SHORT NOTICE.

RECENT SOUTHERN PATRONS: Clifton Mfg. Co., Piedmont Mfg. Co., Camperdown Mfg. Co., Whitney Mfg. Co., Peiser Mfg. Co., Euoree Mfg. Co., Henrietta Mills, Pacolet Mfg. Co., and others.

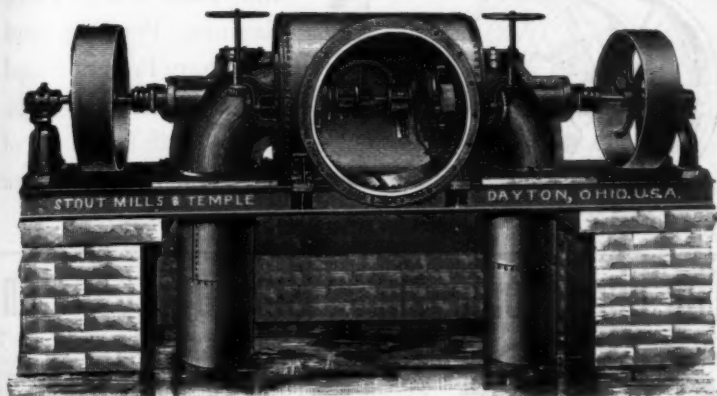
State your requirements and send for catalogue to the

**STILWELL & BIERCE MFG. CO.**

DAYTON, OHIO, U. S. A.

## THE NEW AMERICAN

## TURBINE WATER WHEEL.



On Vertical or Horizontal Shafts. Unequaled in Power, Efficiency and Durability.

SEND FOR ILLUSTRATED CATALOGUE TO

**The Dayton Globe Iron Works Co.**

DAYTON, OHIO.

SUCCESSORS TO STOUT, MILLS & TEMPLE.

Manufacturers also of Pulp and Paper Mill Machinery, Heavy Shafting, Machine-Cut Gearing, Etc.

PLANS and ESTIMATES FURNISHED.



**Bucket Plunger Pumps.**

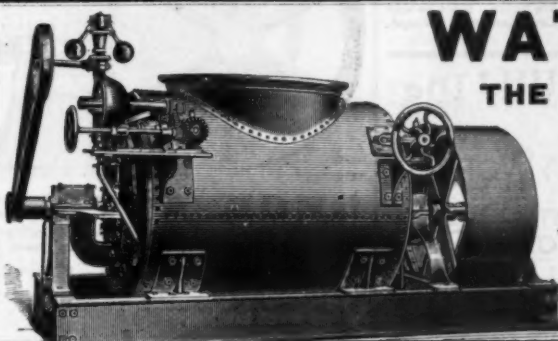
**Valley Pump Co.**

EASTHAMPTON,

MASS.

ENGLISH, MORSE & CO.

KANSAS CITY, MO.



## WATER WHEELS.

THE JAMES LEFFEL TURBINE

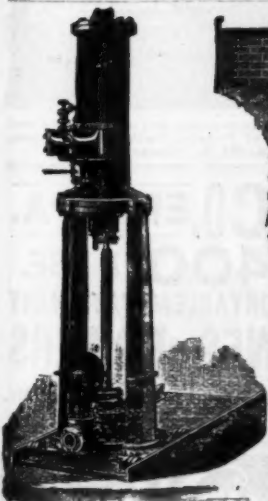
On Horizontal Shaft.

More than 20 varieties of this style built by

**THE JAMES LEFFEL & CO.**

SPRINGFIELD, OHIO, and 110 Liberty Street, N. Y. City.

Send for our Fine Pamphlet and other Information.



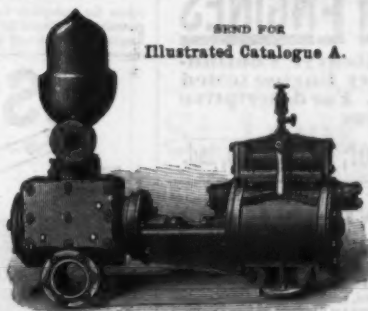
ARTESIAN WELL PUMPS.



Mining Pumps.

## CAMERON STEAM PUMPS.

PUMPS FOR  
BOILER-FEEDING,  
MINES,  
REFINERIES,  
BREWERIES,  
TANNERIES,  
IRRIGATING,  
FIRE PURPOSES,  
RAILROADS and  
FILLING TANKS.  
CRANK and  
FLY WHEEL  
And VACUUM



SEND FOR  
Illustrated Catalogue A.

SIMPLE,  
COMPACT,  
DURABLE,  
EFFICIENT.

ADAPTED TO  
ALL PURPOSES.

NO OUTSIDE  
VALVE GEAR.

The A. S. Cameron Steam Pump Works,

PUMPS. Foot of East 23d Street,

NEW YORK.



Plunger Pattern.

## HYDRAULIC JACKS.

BEST IMPROVEMENTS. MOST STYLES.

Hydraulic Presses, Hydraulic Pumps, Valves & Fittings,

Hydraulic Transfer Jacks for Removing Locomotive Drivers and Trucks.

LEVER PUNCHES and SHEARS.

**WATSON & STILLMAN**

204, 206, 208 & 210 E. 43d Street, New York.

## PUMPS

THE JOHN H. McCOWAN CO.

42, 44, 46 Central Ave., CINCINNATI, O. | Branch House, 1425 E. Main St., RICHMOND, VA.

"The MANUFACTURERS' RECORD is the Most Widely-Quoted Industrial Paper in the World."

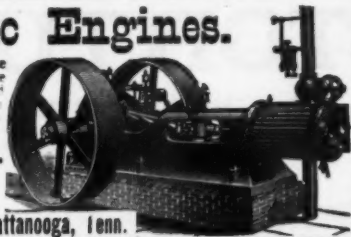
## Valley Automatic Engines.

Applicable to any and all uses requiring Close Regulation and Economical use of Steam. They are constructed throughout of selected material and finished in the best possible manner. Guaranteed to equal any of their class extant in Economy, Regulation, Durability and General Efficiency.

**VALLEY IRON WORKS.**

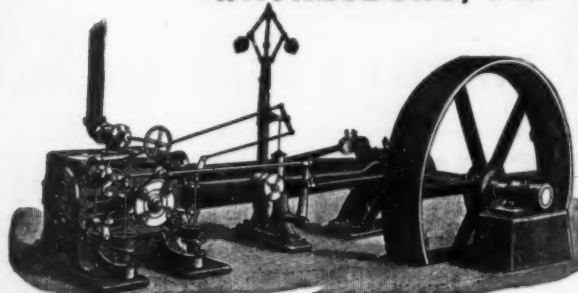
MANUFACTURERS.  
WILLIAMSPORT, PENNA.

CASEY BOILER MFG. CO., Sales Agents, Chattanooga, Tenn.



ECLIPSE CORLISS ENGINES.

## Frick Company, Engineers, Builders, —WAYNESBORO, PA.—



40 to 1,000 H. P.  
Made.

Condensing, Non-Condensing & Compound.

Send for Corliss Circular.

Ice-Making and Refrigerating Machinery.

Send or Ice-Machine Circular.

Special Automatic Electric Light Engines, Steam Boilers, Traction and Portable Engines, Saw Mills. Send for our General Catalogue.

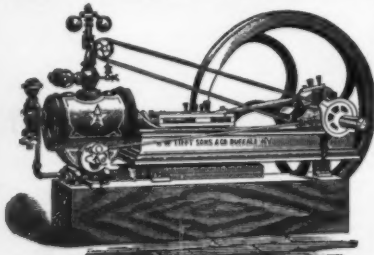
## —) FOR THE LOWEST-PRICED FIRST-CLASS (— ENGINES & BOILERS

ADDRESS

**GEO. W. TIFFT, SONS & CO.**  
BUFFALO, N. Y.

5 to 500 H. P. Special Stock Sizes 5 to 50 H. P., both Stationary and Semi-Portable.

A few good Second-Hand Engines and Boilers are for sale at an astonishingly low figure. Must be sold to make room for stock. Correspondence solicited. Mention this paper.



**Complete Motive Power PLANTS FURNISHED.**

**The HEWES & PHILLIPS**  
Newark, N. J. **IRON WORKS**

Improved CORLISS ENGINES.  
High Pressure.  
Condensing and Compound  
TUBULAR BOILERS.  
HEAVY FLY WHEELS  
A SPECIALTY.  
IN SIZES UP TO  
36 FT. DIA. BY 10 FT. FACE.

Manning Patent Vertical Boilers.

Strong, Well Built, Serviceable  
12 TO 80  
Horse Power.

## STEAM ENGINES

Adapted to Heavy, Continuous Work. Every Engine tested under full load. For descriptive circulars, address

Chandler & Taylor, Indianapolis, Ind.

ESTABLISHED 1864. INCORPORATED 1888.  
**WM. A. HARRIS STEAM ENGINE CO.**

(Successors to Wm. A. Harris.) PROVIDENCE, R. I.

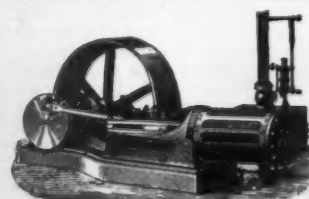
**Builders of HARRIS-CORLISS ENGINES,**  
FROM 20 TO 2,000 HORSE POWER.

These Engines are carefully built of best materials and in different forms, such as Non-Condensing, Condensing and Compound Condensing. Send for copy of **ENGINEERS AND STEAM USERS' MANUAL**, by J. W. Hill, M. E. \$1.25. Mention this paper and send for catalogue. WM. A. HARRIS, Pres. & Treas. The D. A. TOMPKINS CO., CHARLOTTE, N. C., Southern Agents.

## ALEX. K. RARIG & CO.

COLUMBUS OHIO.

MANUFACTURERS OF  
Blast Furnace Plants,  
AUTOMATIC CUT-OFF ENGINES,  
HOISTING ENGINES,  
Boilers, Boiler Plate Punches,  
ROLLS AND SHEARS,  
Clay-Working Machinery,  
Steam Sewer Pipe Presses.



Socket Pipe, Tile and Fire-Proof Dies, Wet and Dry Pans for Grinding and Tempering Clay for Sewer Pipe, Terra Cotta, Brick and Tile. We furnish complete outfits for Sewer Pipe and Brick Plants. Write for catalogue. Correspondence solicited. Mention this paper.

**THE RICE AUTOMATIC**

**GUARANTEED ECONOMY.**  
**REGULATION-DURABILITY.**  
**8 TO 300 H.P. SIMPLICITY-SELF-CONTAINED.**  
**PAIR & TANDEM-COMPOUNDS.**

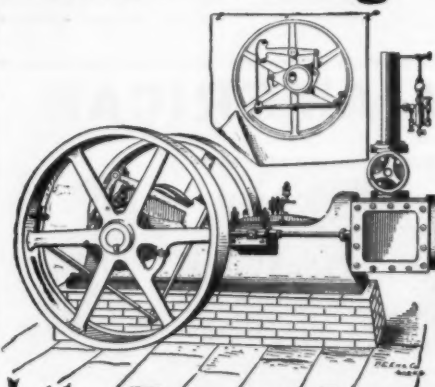
**THE JOHN T. NOYE MFG CO. BUFFALO, N.Y.**

Fairbanks, Morse & Co., Western Representatives, Chicago, St. Louis, Kansas City, Omaha, Denver, St. Paul.

## Porter Manfg. Co., Limited.

SYRACUSE, N. Y.

Builders of Automatic and Plain Slide Valve Engines, Portable and Stationary Boilers, Stand Pipes for Water Works. Only Manufacturers of the **NEW ECONOMIZER PORTABLE BOILER.**

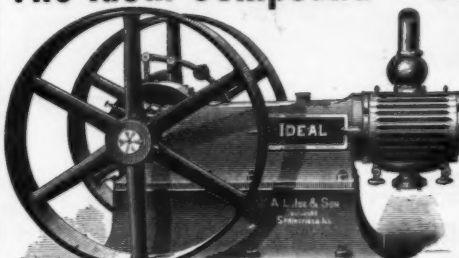


## The Ideal Compound and Single Expansion ENGINES.

Simplicity, Perfection, Unequalled Regulation, Self-Oiling.

**A. L. IDE & SON,**  
MANUFACTURERS,  
SPRINGFIELD, ILL.

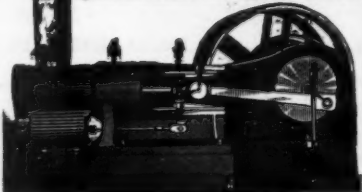
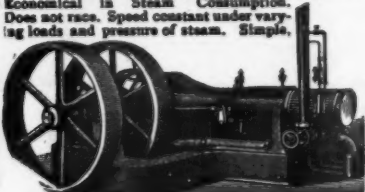
Offices—Chicago, 89 Lake St.; St. Louis 313 Olive St.; Kansas City 1221 Union St.



## BECK AUTOMATIC ENGINE.

For Electric Light, Flour, Cotton, Woolen and Rolling Mill Service and all other purposes requiring power. Economical in Steam Consumption. Does not race. Speed constant under varying loads and pressure of steam. Simple.

durable in construction. Requires no more space than double disc engines. Contracts



taken for complete steam plants, including boilers and all connections, masonry and erection. All work guaranteed. Send for catalogue and full particulars. Also builders of Portable, Vertical and Stationary Engines. Boilers of all styles, and Saw Mills. Address **TATLER MANFG. CO., Chambersburg, Pa.**

## SKINNER ENGINE CO., ERIE, PA.

OVER 3400 IN USE.

Manufacturers of PORTABLE and STATIONARY

**ENGINES and BOILERS**

SEND FOR CATALOGUE.

MORTON, REED & CO., Agts., Baltimore, Md.

NEW YORK AND NEW ENGLAND OFFICE:

C. R. VINCENT & CO., 15 Cortlandt St., N. Y.



**CLEVELAND AND HARDWICK**  
**ENGINE WORKS**  
MANUFACTURERS OF STEAM ENGINES and BOILERS.  
ERIE, PENNA.

## THE BIRDSALL COMPANY.

—OF AUBURN, N. Y.—

Stationary, Automatic, Portable and Traction Engines, Return, Tubular, Locomotive and Steam Heating Boilers, Radiators, Portable Saw and Grist Mills, Shingle Machines, Threshers, Fruit Evaporators, etc., etc. Branch House, 265 North Street, Keon Building, Baltimore, Md.

FRED. I. MOSHER, Manager.

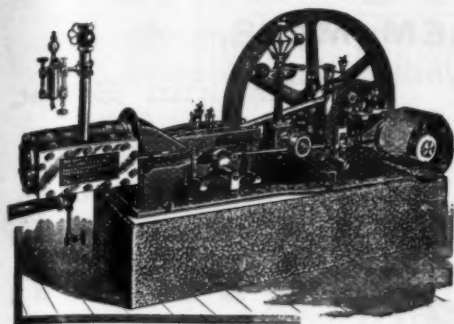


336, 338, 340, 342  
NORTH ST.**The WARFIELD MANUFACTURING CO. BALTIMORE, MD.**

COMPLETE PLANTS FOR THE

**Generation and Transmission****STEAM POWER.**

GENERAL MACHINE WORK.

**Machinery Designed and Constructed for Special Purposes.**

THE WARFIELD-PILLINGS AUTOMATIC ENGINE.

Class A.—The Warfield-Pillings Automatic Engine. A high-grade Engine, (for high or medium speed,) for electric light and other purposes.  
Class B.—The Warfield Throttling Governor Engine—Horizontal and Vertical.

OUR MACHINERY IS CLASSED AND CATALOGUED AS FOLLOWS:

Class C.—Steam Boilers—Stationary Tubular, Upright Tubular.  
Class D.—Shafting, Hangers, Pulleys, Couplings, &c.  
Class E.—Fruit, Vegetable and Oyster Packers' Machinery—most complete line on the market.



THROTTLING GOVERNOR ENGINE, HORIZONTAL.

Class F.—Can-Making and Sheet-Metal Machinery.  
Class G.—The Warfield-Pillings Patent Water Motor, Ceiling, Column and Exhaust Fans, complete Ventilating Apparatus, Patent Electric Motors.

Any of the above Catalogues mailed upon application.

**TALBOTT & SONS, RICHMOND, VA.**

MANUFACTURERS OF

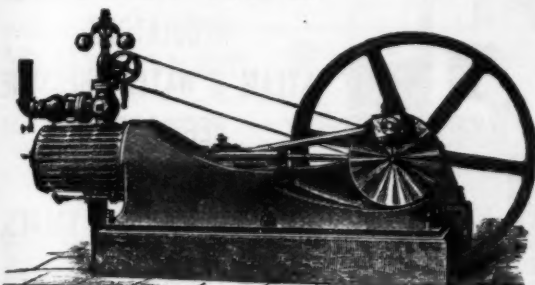
**Engines and Boilers,**

SAW, CORN AND WHEAT MILLS,

ROPE FEED for SAW MILLS, TIMBER GUAGES, graduated by 1-16 of an inch. Shafting, Hangers and Pulleys,

**Cotton-Seed Oil Mill Machinery,**

MODERN COTTON GINNERIES.



BRANCH OFFICES:

MACON, GA.

CHARLOTTE, N. C.

ESTIMATES AND CONTRACTS MADE FOR COMPLETE OUTFITS, Embracing the Latest and Best Improvement.

**ENGINES AND BOILERS**

FROM 2 TO 400 HORSE-POWER.

The strongest, most compact and best built outfits on the market.

Wood-working and Iron-working Machinery a Specialty.

Send for Catalogue B.

**THE GLOBE MACHINE CO.**

35 Broadway, New York.

Why not subscribe for the MANUFACTURERS' RECORD? Price \$4 per year or six months for \$2.

**"THE KRIEBEL" NEW MODEL STEAM ENGINES.**

Single and Double Cylinder STATIONARY, SEMI-PORTABLE, MARINE and HOISTING ENGINES. STEEL BOILERS of all styles and sizes. AUTOMATIC and HORIZONTAL THROTTLING ENGINES. GOVERNORS, INJECTORS, STEAM PUMPS, ETC.

Send for Catalogue, stating what you wish prices on.

RICE &amp; WHITACRE MFG. CO.

47 &amp; 49 N. Canal Street, CHICAGO, ILL.

**THE LOCKWOOD MANUFACTURING CO.**

BUILDERS OF

**Steamships, Tow Boats, Steam Yachts,**

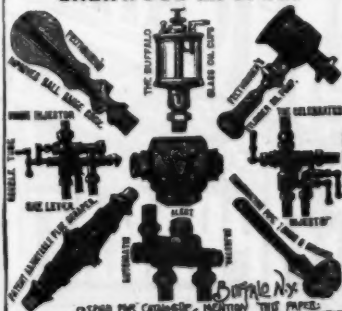
ENGINES AND HEAVY MACHINERY.

**Beaudry's Duplex Power Forging Presses.**

Send for Catalogue and Prices.

EAST BOSTON, MASS.

SHERWOOD MFG. CO.



THE CELEBRATED  
**UNION INJECTOR.**  
Only One Lever to Operate.  
**The Eagle Ejector.**

The Best Jet Pump Made.

Felthousen's Cylinder Oil Pumps; Improved Gauge Cocks; Adjustable Spring Flue Scraper; Improved Ratchet Drills; Combination Pipe and Nut Wrench; Compression Grease Cups.  
**Buffalo Glass Oil Cups & Lubricators**  
Pop Valves; Steam and Water Gauges; Single Bell and Chime Steam Whistles; Piston and Valve Rod Packing; Supplies all kinds for Engines and Boilers.

SHERWOOD MFG. CO.

Sole Manufacturers. BUFFALO, N. Y.

**THE RELIANCE****Safety Water Columns**

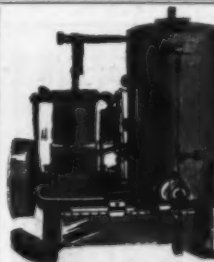
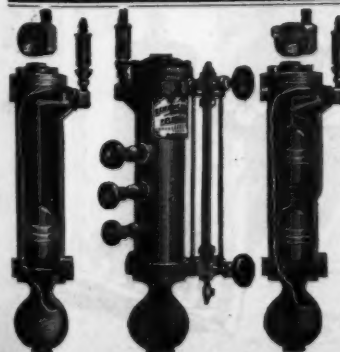
OVER 15,000 IN USE.

SAFETY of Life and Property. ECONOMY of steam, of fuel, of repairs, of wear on the boiler.

The Most Elegant and Most Economical Water Columns ever placed on boilers. No steam user or engineer can afford to operate boilers without them. This is the reason why they have been ADOPTED BY MANY OF THE LARGEST STEAM USERS IN THE WORLD.

Every Column Warranted. Send for price list.  
**The RELIANCE GAUGE CO., Sole Manufacturers,**  
Argyle Building, Cleveland, O.

For sale by all Dealers. For sale by all Boiler Makers.



**Acme Automatic Engine,**  
With BRYANT'S Patent Safety Boiler.

Stems 2, 3 and 4 H. P. Fuel, Kerosene (Coal) Oil, 120° to 125° Fire test. No dust, ashes, or smoke. No Skilled Engineer required. "Brake" Tests show that 3 1/2 gals. fuel will deliver a full H. P. on belt for 10 hours, in the case of our 2 H. P. Engine and Boiler.

**Rochester Machine Tool Works,**  
BUILDERS, ROCHESTER, N. Y.

SEND FOR CATALOGUE.

**W. R. BURGESS, Southern Representative.****IMPROVED WHEELLOCK ENGINE.****COMPLETE STEAM POWER PLANTS**

For Cotton Mills, Electric-Light Plants and All Purposes Where Durability and Economy of Steam is Important.

The Wheellock Engine has many advantages not possible to any other engine. Heating and Ventilation of Cotton Mills, Drying Lumber, Brick, Pottery, &c., by the Sturtevant System. Everything for Saw Mills, Planing Mills, Brick-Making, &c.

Correspondence solicited.

**GREENSBORO, N. C.****St. Louis Iron & Machine Works,**

Capital Stock, \$200,000 Paid Up.

**ST. LOUIS, MO.**

Established 1854.

MANUFACTURERS OF

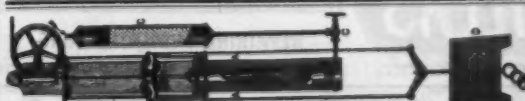
Incorporated 1878.

**Corliss, Steamboat and Slide Valve Engines,**

COTTON COMPRESSES, PLATE GLASS MACHINERY,

HOISTING TRAVELERS,

Mining Machinery, Dry Clay Brick Machinery, &amp;c.



Without any question the  
Greatest  
**FUEL SAVER**  
of any Regulator.

**Hallock Damper Regulator.**

UPWARDS OF 2,000 NOW IN USE.

Keeps a steady pressure of steam. Saves fuel and gives regularity of power. Simple in construction. It does not get out of order. Uses no water. Requires no tank. Will outlive any boiler. Every machine warranted.

**AUSTIN ADAMS, Sole Agent, 40 Day Street, New York.**

Regulator can be taken apart, cleaned and put together in five minutes.

# THE J. C. McNEIL CO.

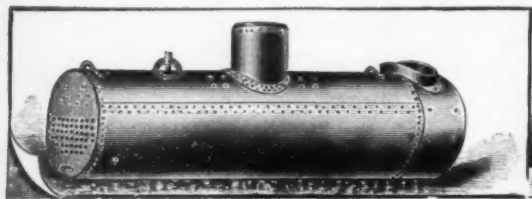
BUILDERS OF

## Standpipes, Boilers and Tanks,

OF EVERY DESCRIPTION.

Write for Prices.

AKRON, OHIO.



## Fulton Steam Boiler Works,

RICHMOND, IND.

We offer for the next ten days our Standard Tubular Boilers, warranted 60,000 T. S., Siemens-Martin Steel, at the prices named below, then what?

H. P. ....	10	12	15	20	25	30	35	40	45	50	60	70	80	90	100
Price .....	\$65	\$75	\$80	\$90	\$100	\$130	\$145	\$170	\$180	\$200	\$250	\$290	\$325	\$350	\$400

We would get more orders than we could ever fill, but if you are **BUYERS** and want to know **HOW NEAR WE CAN COME TO THE ABOVE FIGURES**, write us at once.

JOHN T. CAULFIELD, Proprietor.

SEND FOR THIS BOOK

FREE ON APPLICATION.

## THE BABCOCK & WILCOX CO. WATER TUBE

30 CORTLANDT ST. N.Y.  
107 HOPE ST.  
GLASGOW, SCOTLAND.

BRANCH OFFICES

MANUFACTURERS IN UNITED STATES, SCOTLAND, FRANCE, GERMANY & AUSTRIA.

AWARDED THE GRAND PRIZE AT LATE PARIS EXPOSITION.

## ARMSTRONG BROS.

MANUFACTURERS OF

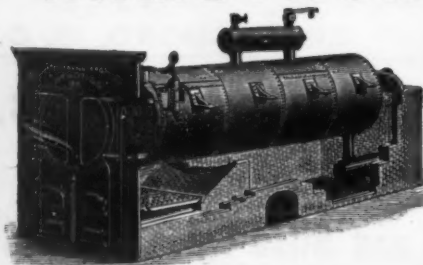
## Engines and Boilers

ALL SIZES AND KINDS.

Output Last Year 1473 Engines and Boilers.

Have large stock New Standard Boilers, and also large stock Second-hand Engines and Boilers, all sizes and kinds. Will dispose of at a bargain. For Circulars address

ARMSTRONG BROS., SPRINGFIELD, OHIO.



STATIONARY

MARINE

## Eagle Boiler Works

DAN SHEA &amp; CO., Prop's.

Boiler Makers and Sheet-Iron Workers.

REPAIRING PROMPTLY DONE.

140, 142 and 144 FRONT STREET.

MEMPHIS, TENN.

## The Tudor Boiler Manufacturing Co.

### Steam Boiler and Tank Makers

OFFICE, 242 E. Pearl St. (opp. Pittsburg, Cincinnati & St. Louis Ry.), CINCINNATI, O.  
SECOND-HAND BOILERS ALWAYS ON HAND.



# LOCKE BROTHERS,

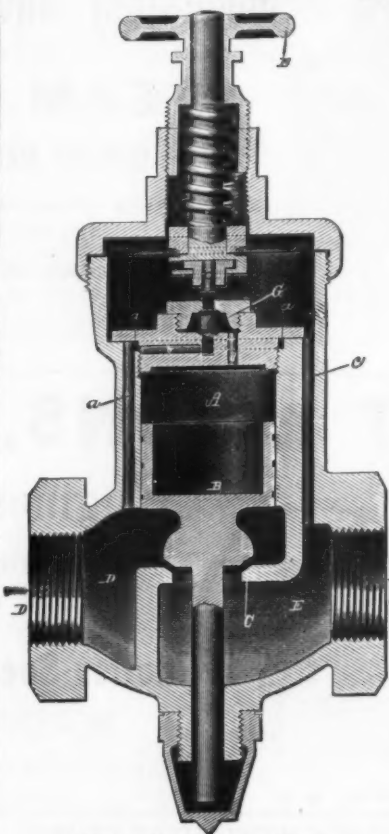
\* SALEM, MASS. \*

Franklin Street,

Patentees and Manufacturers

OF

## STEAM APPLIANCES.



THE LOCKE REDUCING VALVE.

SUPERIOR STEAM DAMPER REGULATORS,  
STEAM & WATER PRESSURE REGULATORS,  
STEAM TRAPS,  
Improved GLOBE VALVES,  
CHECK VALVES,  
REDUCING VALVES,  
BACK PRESSURE VALVES.

SATISFACTION GUARANTEED.

Send for Circulars.

# Wm. Baragwanath & Son

## FEED WATER HEATING

## PURIFYING APPARATUS

48-50 & 52 W. Division St. CHICAGO



# STEAM BOILERS.

## HOISTING AND MINING ENGINES.

EDWARD KENDALL & SONS,  
MANUFACTURERS,  
—CAMBRIDGEPORT, MASS.—

Miles' Patent Downward Tubular Boiler,  
Locomotive Tubular Boilers,  
Horizontal Tubular Boilers,  
Upright Boilers,

Miles' Patent Oil Stills, Agitators,  
Miles' Patent Tubular Water Heater,  
Drying Pans, Fish Stills,

Miles' Patent Pulp Stills,  
Ships' Water Tanks,  
Rotary Dryers, Furnaces, Sand Heaters,  
Galvanizing Kettles,

Special Machinery for Dishing Heads  
of Large Diameter.

Asphalt Paving Tools,

Plans of Miles' Patent Boiler and Still  
Settings, &c.

GEORGE MILES,  
Steam Boilers

AND

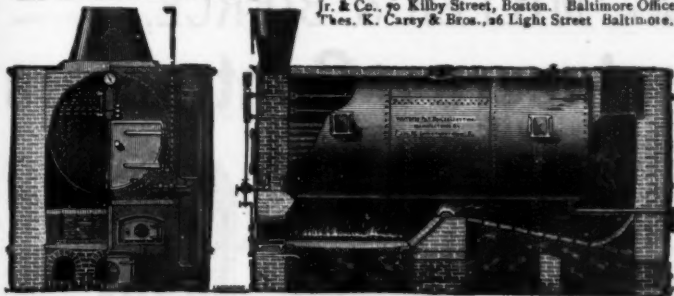
• Plate Iron Work •

OF ALL KINDS.

SOUTH BOSTON, MASS.

## Weitmyer Patent Furnace.

Manufactured and sold by FOUNDRY AND MACHINE DEPARTMENT,  
HARRISBURG CAR MANUFACTURING CO., Harrisburg, Pa.  
New York Office, Messrs. Fleming & Kimball, 17 Dry Street. New England Office, Messrs. John Post,  
Jr. & Co., 70 Kilby Street, Boston. Baltimore Office, Messrs.  
Thos. K. Carey & Bros., 26 Light Street Baltimore.



See our map & Engines, Portable and Tractor Engines, Steam Road Rollers, &c. for all descriptions.

## HEINE SAFETY BOILER CO.

PATENT

Safety Water-Tube  
Steam Boilers.

ECONOMY IN FUEL AND SPACE.

FREEDOM FROM SCALING.  
POSITIVE CIRCULATION.

Equally adapted for Power or Heating Purposes,  
for Clear or Muddy Water, and any kind  
of Fuel. Send for Circular J to

HEINE SAFETY BOILER CO., 706, 707 and 708  
ST. LOUIS, MO., Bank of Commerce Building.

OR TO OUR AGENTS:

Ridson Iron Works, San Francisco, Cal.  
Stearns, Roger & Co., 3 Duff Block, Denver, Col.  
Jas. K. Rugg & Co., 107 W. Second St.,  
Cincinnati, O.  
H. E. Collins & Co., 34 Lewis Bldg.,  
Pittsburg, Pa.  
Jas. P. Witherow, Lewis Block,  
Pittsburg, Pa.  
VanZile, McCormack & Co., Albany, N. Y.  
Jas. H. Harris, 82 Madison Street, Chicago, Ill.  
L. Meisser, 34 St. Charles St., New Orleans, La.  
R. M. Huston, 239 Broadway, New York.  
English, Morse & Co., Kansas City, Mo.  
Seeger & Guernsey Co., City of Mexico, Mex.



## THE CURTIS

STEAM  
PRESSURE  
REGULATOR

Has been in general use now about seven years, and has from the first taken the lead of all others, and stands unrivalled to-day for its reliability and durability. It is used wherever the pressure of steam or any other fluid NEEDS TO BE REDUCED AND CONTROLLED on Steam Heating and Drying, Electric Light Plants, Marine Engines, Railroad Car Heating Steam, Pumps, Natural Gas, Air and Water, in the United States, and in the leading countries of Europe, and is sold and endorsed by the trade universally.

The Curtis Regulator Co., 180 Beverly Street, Boston, Mass.

GENERAL AGENCIES.

NEW YORK, 109 Liberty St.  
PHILADELPHIA, 2035 N. Front St.  
MINNEAPOLIS, 210 S. Third St.  
CHICAGO, 218 Lake St.

THE BOUGHEN ENGINEERING CO.  
Cincinnati, O.  
ENGINEERS & CONTRACTORS  
For STEAM & WATER WORKS & PLANTS.  
Correspondence solicited.

## JARVIS Patent FURNACE



For Setting Steam Boilers.

Economy of Fuel, with increased capacity of Steam Power. Like the Siemens Process of Making Steel, it utilizes the waste gases with hot air on top of the fire. Will burn all kinds of waste fuel without a blast, including Slack Coal, Sawdust, Logwood Chips, &c. Send for Circulars.

JARVIS ENGINEERING CO.

J. N. PRATT, Treas. and Gen'l Manager.  
61 Oliver Street, BOSTON, MASS.

SOUTHERN REFERENCES:

Eagle & Phenix Mfg. Company, Columbus, Ga.  
Anniston Mfg. Co., Anniston, Ala.  
P. King Mfg. Co., Augusta, Ga.  
Rose Mining Co., Charleston S. C.  
Maryland Pavement Co., Baltimore, Md.  
Brush Electric Light Co., Baltimore, Md.  
Ritrick, Matosca and Battersea Mfg. Co's., Petersburg, Va.  
Rasin Fertilizing Co., Baltimore, Md.  
Tanner & Delaney Engine Co., Richmond Va.  
Sibley Mills, Augusta, Ga.  
Graniteville Mfg. Co., Graniteville, S. C.  
Charleston Bagging Co., Charleston, S. C.  
F. H. Mayo & Bros., Richmond, Va.  
Phosphate Mining Co., Beaufort, S. C.  
Brush Swan Electric Light Co., Norfolk, Va.  
Columbus Ice & Refrigerator Co., Columbus, Ga.  
Lenoir Manufacturing Co., Lenoir, East Tennessee.  
Vance Mill, Graniteville, S. C.  
Charleston Electric Light Co., Charleston, S. C.

## THE KENNEDY INJECTOR

Most Durable, Most Economical, Simplest and Best on the Market.

Warranted to Lift Water 25 feet.

MANUFACTURED BY

The Forest City Brass Works,

90 to 96 Merwin St. 2 to 38 Leonard St.

CLEVELAND, O.

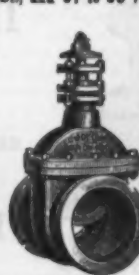


## LUDLOW VALVE MFG. CO.

Office and Works: 938 to 954 River St., and 67 to 83 Vail Ave., Troy, N. Y.

VALVES

Double and Single Gate, 1/4 inch to 48 inch; outside and inside Screws, Indicators, etc., for Gas, Water, Steam, Oil. SEND FOR CIRCULAR.



Also Fire Hydrants, Yard and Wash Hydrants, Check and Foot Valves.

## The LUNKENHEIMER BRASS MFG. CO.

CINCINNATI, OHIO, U. S. A.

This Cut Changes Weekly.

Send for July, 1890, Catalogue, containing complete description of Heavy Regrinding GLOBE VALVES, Check Valves, Gate Valves, Lever Throttle Valves, Pop Safety Valves, Improved Glass Oil Cups, Automatic Sight Feed Lubricators, Grease Cups, &c.



Index Sight-Feed Glass Oil Cup. For Sale by All Leading Jobbers throughout the United States.

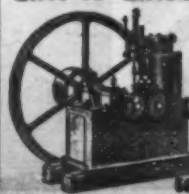
BLAST FURNACES,  
ROLLING MILLS,  
STEEL WORKS,  
MINES, ETC.,  
ETC.

William B. Molloch & Co.

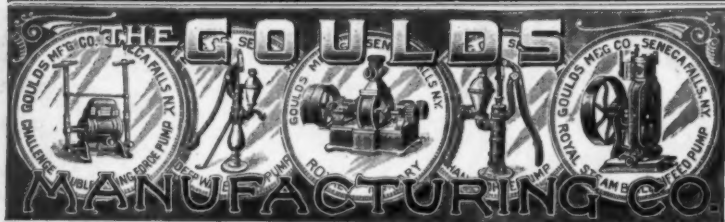


OIL WELLS,  
REFINERIES,  
ELECTRIC LIGHT PLANTS,  
WATER WORKS, ETC.,  
ETC.

VAN DUZEN GAS & GASOLINE ENGINE



OPERATED with COAL and OTHER MANUFACTURED GASES and GASOLINE. RELIABLE and ECONOMICAL. Fully Warranted. VAN DUZEN Gas & Gasoline Engine Co. 66 E. 2d St., Cincinnati, O.



Send for new No. 14 catalogue 15-23 Ovid street, Seneca Falls, N. Y., and 60 Barclay st., New York. GENERAL AGENTS: Goulds & Caldwell Co., Chicago, Ill.; N. O. Nelson Mfg. Co., St. Louis, Mo.

## THE PITTSBURGH BRIDGE COMPANY, Iron Bridges, Viaducts and Buildings

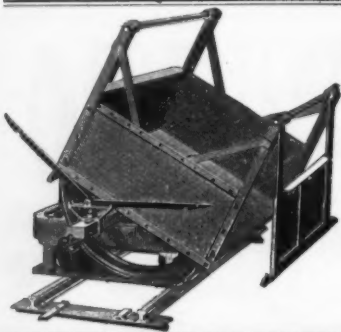
R. MERYDITH, Agent at Chattanooga, Tenn.

## POTOMAC BRIDGE WORKS,

FREDERICK CITY, MD.

BRIDGE ENGINEER and CONTRACTOR.

Iron and Steel Bridges, Roofs, Buildings, Masonry and Pile Foundations. Contracts taken for Substructure and Superstructure Entire.



## THE Corey Car & Mfg. Co.

Manufacturers of Every Description of

## Dumping and Mining Cars

IN WOOD, IRON AND STEEL.

Portable Track and Switches,

301 & 303 Phenix Building,

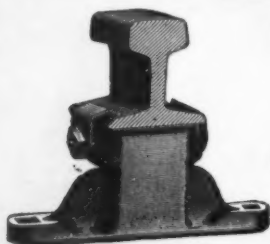
CHICAGO, ILL.

## R. T. WHITE, 12 Pearl Street, BOSTON, MASS.

## Improved Patented Material FOR Street Railway Roadbeds.

BEST MATERIAL. LOWEST PRICES.  
CORRESPONDENCE SOLICITED.

THOMAS ASHBURNER, Western Agent,  
KANSAS CITY, MO.



DAISY CHAIR.

Patented January 28th, 1890.

Sample Chair and Section of Rail sent (express prepaid) to prospective purchasers. Made of cast iron or cast steel mixture and for any form of rail having a T rail form of base.

## WEBSTER MFG. CO.,

Successors to WEBSTER & COMSTOCK MFG. CO.

MANUFACTURERS OF  
MACDONALD FRICTION CLUTCHES,  
Shafting, Pulleys, Etc.

FOUNDERS AND GENERAL MACHINISTS.

COTTON, RUBBER and LEATHER

Coker-Metcalf Power Grain Shovel.

DEALERS IN  
BELTING.



New Improved Conveyor Coupling, so arranged that by taking out bolt any desired section may be removed.



"HERCULES" Steel Scoop.



PATENTED APR. 17-1893.

SPIRAL STEEL CONVEYOR.



## New Era Grader, Ditcher and Railroad Builder.

In building railroads makes cuts or fills embankments for 2 cents per cubic yard, moving 1,000 to 1,500 cubic yards in 10 hours with six teams and three men. Loads 600 to 800 wagons of 1 1/2 yards in same time at a cost of 2 1/2 cents each. Builds country roads at the rate of one mile in three days. We also make the Austin-Reversible Road Machine, Buck Scraper, Wheel and Drag Scrapers, Contractors' Plows, and Street Sweepers. Send for catalogue.

F. C. AUSTIN MFG. CO., Chicago, Ill.

## FOR MINING MACHINERY, HOISTING ENGINES, AIR COMPRESSORS,

All Superior in Design and Efficiency.

Write to  
MORRIS COUNTY  
MACHINE COMPANY  
DOVER,  
N. J.

LEWIS J. MILLER, Philadelphia, Pa. MILLER & BIERCE, WILL W. BIERCE, Memphis, Tenn.

## Engineers and Contractors



## Lewis Miller's Improved Steam and Hydraulic Cotton Compress,

(Lewis Miller's and John F. Taylor's Patents.)

The most powerful, economical, and the fastest working Compress built. The only Compress in the world that will load cars and vessels to their full tonnage.

Also Agents and Manufacturers of Steam Engines, Water Engines, Pumps, Boilers, and Heavy Machinery in General.

OFFICES:

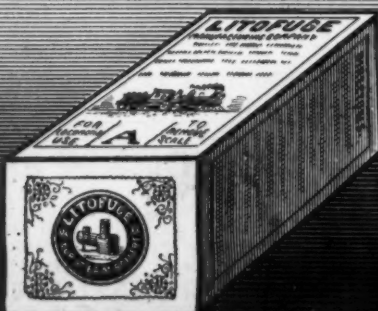
PHILADELPHIA, PA., (ROOMS 707 & 710 GIRARD BLDG.) MEMPHIS, TENN., ROOM 12, COTTON EXCHANGE

Office and Salesroom, 195 S. Canal St. Chicago, Ill.  
Works, 1075-1096 West 15th St.

# Litofuge

is the best boiler Compound.

LITOFUGE MANUF'G CO. 62 JOHN ST. NEW-YORK.





## Railroad Construction

Abilene, Texas.—Railroad.—A railroad is projected to San Angelo. Right of way is being secured.

Baltimore, Md.—Railroad.—Frederick & Zeigler, of Alesia, have, it is reported, secured contract for constructing the Gunpowder Valley Railroad, previously mentioned.

Baltimore, Md.—Belt Railroad.—Ryan & McDonald have contract for constructing sections 1, 2 and 4, and McCabe Bros. for section 3, of the Baltimore Belt Railroad, lately mentioned. Work has been commenced. The entire cost will, it is thought, amount to about \$5,000,000.

Baltimore, Md.—Street Railroad.—The construction of a street railroad to Towson is being talked of. If built, it is possible that the North Baltimore Passenger Railroad Co. will construct it.

Batesville, Ark.—Railroad.—Engineers are, it is stated, completing the survey for a railroad to extend to Carthage, Mo., a distance of 220 miles. The road, if built, is to be a portion of the Missouri Pacific system.

Beattyville, Ky.—Railroad.—The East Tennessee, Virginia & Georgia Railway Co. (office Knoxville) is said to contemplate an extension of its railroad to Jellico, Tenn.

Bedford City, Va.—Railroad.—Final surveys are being completed for the Bedford & James River Railroad, previously reported.

Birmingham, Ala.—Railroad.—The Alabama Mining & Construction Co., of Talladega, can give information concerning the construction of the Birmingham & Atlantic Railroad. W. H. Skaggs is president of the former.

Birmingham, Ala.—Dummy Railroad.—The South Birmingham Land Co. has secured right of way to construct a dummy railroad through South Highlands.

Braxton, W. Va.—Railroad.—Track-laying will soon be commenced, it is said, on the Western & Elk River Division of the West Virginia & Pittsburgh Railroad (office Parkersburg), previously mentioned.

Brevard, N. C.—Transylvania county has, it is stated, decided to subscribe \$50,000 to the French Broad Valley Railroad Co., lately mentioned.

Bristol, Tenn.—Electrical Railroad.—The Southwest Bristol Land Co. will construct an electrical railroad to its property. G. P. Cannon, manager, can give information.

Bristol, Tenn.—Railroad.—The extension of the Norfolk & Western Railroad (office Roanoke), lately referred to, will, it is rumored, reach Knoxville.

Carrollton, Ky.—Railroad Bridge.—A bill has been introduced into Congress authorizing the construction of a bridge across the Kentucky river by the Louisville, Covington & Cincinnati, the Carrollton & Louisville and the Westport, Carrollton & Covington Railroad Companies.

Charleston, W. Va.—Railroad.—The Scotch Coal & Iron Railroad Co. has, it is stated, purchased over 250,000 acres of mineral and timber land in West Virginia, and is reported to construct a railroad from Charleston to a connection with the Norfolk & Western Railroad (office Roanoke, Va.).

Charlotte, N. C.—Electrical Railroad.—It is rumored that a Northern company is endeavoring to purchase the Charlotte Street Railway, and will, if successful, convert same into an electrical railroad.

Charlottesville, Va.—Railroad.—The Albemarle Mining, Manufacturing & Railway Co. is the name of the company mentioned last week as organized to construct a railroad to Scottsville.

Charlottesville, Va.—Street Railroad.—The Charlottesville & University Street Railway Co. will, it is reported, extend its street railroad to the property of the Charlottesville Development Co.

Chattanooga, Tenn.—Railroad.—The Lookout Mountain Incline Railway Co. will relay the track of its narrow-gauge railroad extending around Lookout Mountain with heavier rails, and also desires to dispose of its present track.\*

Chattanooga, Tenn.—It is stated that the Nashville, Chattanooga & St. Louis Railroad Co. (office Nashville) is said to have purchased the property, franchises, etc., of the Tennessee Coal, Iron & Railway Co.

Chattanooga, Tenn.—Surveys are being made for a railroad to extend around Lulahu Lake.

Chattanooga, Tenn.—Railroad.—The Chattanooga, Middlesborough & Virginia Railroad is the name of the railroad reported as projected to Middlesborough.

Chattanooga, Tenn.—Railroad.—A syndicate is reported as contemplating the construction of a railroad to Walden's Ridge. J. C. Angiers, of New York, is said to be interested.

Columbia, Ala.—Railroad.—George I. Campbell, secretary and treasurer Columbia, Geneva & Western Railroad Co., lately referred to, writes that it is not probable that contracts will be let until spring.

Cookeville, Tenn.—Railroad.—The Nashville & Knoxville Railroad Co. (office Lebanon) intends, it is stated, to construct an extension to a connection with the Cincinnati Southern Railroad.

Conway, S. C.—Railroad.—It is said to be possible that a branch of the projected Cape Fear & Cincinnati Railroad, previously referred to, will be constructed from Conway to Marion.

Corpus Christi, Texas.—Dummy Railroad.—The Corpus Christi Improvement Co., previously reported as incorporated, has elected E. H. Ropes, president; W. B. Newkirk, secretary, and John Scott, treasurer. The company was organized to construct a 7-mile dummy railroad; 3½ miles are already finished and the balance under construction. The gauge is 4 feet 8½ inches.

Dallas, Texas.—Electrical Railroad.—The Dallas Consolidated Railway Co. has secured permission to construct an electrical railroad through the State fair grounds. Royal A. Ferris, general manager, can give information.

Dallas, Texas.—The Dallas & Waco Railroad Co. will hold a stockholders' meeting on October 31 to decide whether to authorize the company to borrow money for construction purposes in a sum not to exceed \$30,000 per mile.

Denison, Texas.—The Denison & Washita Valley Railroad Co. has filed a resolution authorizing the issuance of first mortgage construction and equipment bonds to the amount of \$50,000 per mile.

Fort Payne, Ala.—Railroad.—The Chattanooga Southern Railroad Co. (office Chattanooga, Tenn.) will, it is stated, construct a railroad to Fort Payne.

Fort Worth, Texas.—Street Railway.—The Riverside Street Railway Co. has filed its charter; capital stock \$20,000.

Friendsville, Md.—Railroad.—The Baltimore & Ohio Railroad Co. (office Baltimore) will, it is reported, extend the Oakland State Line Railroad to Oakland.

Galveston, Texas.—Electrical Railroad.—The Rapid Transit Co. has been organized with Seabrook W. Snyder, president; E. H. Porter, secretary, and T. A. Gary, treasurer. The company is organized to construct an electrical railroad.

Houston, Texas.—Electrical Railroad.—Final arrangements are said to have been made for equipping the Bayou City Street Railway, previously referred to, with electricity.

Knoxville, Tenn.—Belt Railroad.—The Knoxville Belt Railroad Co. has given a mortgage for \$50,000 to the London & New York Investment Co.

Knoxville, Tenn.—Street Railroad.—The Chisholm Street Railroad Co. has been incorporated by J. W. S. Frierson, Sylvanus S. Herrel, J. C. Luttrell and others for the purpose of constructing a 5-mile street railroad.

Knoxville, Tenn.—The city council has decided to authorize the issuance of \$25,000 of bonds, previously referred to, for the benefit of the Knoxville Southern Railroad Co. The bonds bear 5 per cent. and run for 20 years.

La Grange, Ga.—The Georgia Southern & Florida Railroad Co. (office Macon) will erect a freight depot for the Macon & Birmingham Division.

Lake Worth, Fla.—Railroad.—The Jupiter & Lake Worth Railroad Co. has been incorporated by J. R. Parrott and F. M. Day, Jr., of Jacksonville, and G. J. Zehnauer, of Palatka, for the purpose of constructing a railroad to Jupiter; capital stock \$50,000.

Lenoir, Tenn.—Railroad.—Surveys are said to have been nearly completed for the Lenoir City & Cincinnati Railroad, previously referred to.

Lima, Ark.—Railroad.—The project to construct a railroad to Goodwin is being revived. Wm. Dougherty is interested.

Louisville, Ky.—Belt Railroad.—T. C. H. Vance writes in reference to the report of last week that the company will construct a belt railroad which will have new equipment throughout.

Macon, Ga.—Railroad.—The Covington & Macon Railroad has been placed in the hands of John C. Key, of Monticello, as receiver, on account of default in payment of the interest of its bonds on September 1.

Markham, Va.—Railroad.—Work of locating the Shenandoah Valley Railroad Co.'s (office Roanoke) line to Washington has been commenced.

Maxton, N. C.—Railroad.—Notice is given that application will be made at the next legislature for a railroad, previously mentioned, to extend to Little Bluff via Raemont.

Mobile, Ala.—Railroad.—M. B. Bond is reported as surveying a route for a railroad to New Orleans, La.

New Troy, Fla.—Railroad.—The Atlantic & Gulf Railroad Co. of Florida has been incorporated by James Shears, J. M. Tilden, J. L. Davis and H. R. B. Tilden for the purpose of constructing a railroad from a point in St. John's county to a point in La Fayette county.

Norfolk, Va.—Railroad.—The Norfolk & Virginia Beach Railroad Co. is considering widening

the gauge of its road, and also the construction of branch roads.

Oakland, Fla.—Railroad.—Work has been commenced on the extension, lately referred to, of the Tavares & Gulf Railroad from Waite's Junction to Oakland.

Orlando, Fla.—Railroad.—The Alabama, Florida & Atlantic Railroad has, it is stated, been sold to an English syndicate who will extend it to Eustis.

Petersburg, Va.—Street Railroad.—Thomas Pannell and others have applied for permission to construct a street railroad.

Radford, Va.—Railroad.—The railroad lately reported as projected to Floyd C. H. will, it is stated, if built, be extended to Stuart.

Raleigh, N. C.—Railroad.—The Richmond & Danville Railroad Co. (office Richmond) is reported as to construct a branch railroad to the site for the projected cotton factory.

Rock Hill, S. C.—Street Railroad.—The Rock Hill Land & Town Site Co. will construct a street railroad.\*

Rockwood, Tenn.—Railroad Bridge.—The East Tennessee, Virginia & Georgia Railway Co. (office Knoxville) and the Chattanooga Land, Coal, Iron & Railway Co. (office Chattanooga) have, it is stated, completed arrangements for the construction of a bridge to cost \$300,000.

Rosedale, Miss.—Railroad.—The town has voted a subscription of \$14,500 to the Rosedale & Mississippi Central Railroad Co.

Savannah, Ga.—Electrical Railroad.—The city council has granted to all the street railroad companies in Savannah the right to operate their lines by electricity.

Sumter, S. C.—The Charleston, Sumter & Northern Railroad Co. will hold a stockholders' meeting on September 15 for the purpose of considering the proposition to consolidate the Charleston, Sumter & Northern and the Bennettsville & Cheraw Railroad Companies.

Tarboro, N. C.—Railroad.—The Albemarle & Raleigh Railroad Co. (office Wilmington) will, it is said, extend its line to Durham.

Troupe, Texas.—Railroad.—A railroad is being talked of to extend to the Boliver Peninsula via New Birmingham and Rusk, with branches from New Birmingham to the coal fields near Texarkana, and from a point in Polk county to Sabine Pass.

Tuskaloosa, Ala.—Belt Railroad.—The Tuskaloosa Belt Railway Co. is reported as to extend its track.

Vernon, La.—Railroad.—Engineers are reported as making surveys for the route of the Kansas City, Watkins & Gulf Railroad, previously mentioned.

Vicksburg, Miss.—Railroad.—The Georgia Pacific Railroad Co. (office Birmingham, Ala.) is reported as to construct a branch railroad from Vicksburg to Canton.

"THE substantial unanimity of the reports as to the quality and quantity of this year's cotton crop," says the Boston Advertiser, "should direct increasing attention to the stocks of Southern railroads, which will profit immensely from this carriage of this large crop, and the merchandise which farmers will be able to buy. And still further, the steady development of the mineral resources of the South is an even greater promise of increasing earnings and profits on these Southern roads."

THE Covington & Macon has been placed in the hands of a receiver. Mr. John C. Key was appointed receiver on petition by Alexander & Green, of New York, and B. H. Hill, of Atlanta, as attorneys for the Mercantile Trust Co., of New York. The plaintiff, the Mercantile Trust Co., is trustee for the bondholders, and brought action because the railroad company failed to pay the coupons of the bonds which fell due on September 1. The amount was only about \$35,000, which represents six months' interest at 6 per cent. This is the first payment ever defaulted by this company.

IT is reported from New York that the committee that has heretofore represented the holders of the first and general mortgage bonds of the Shenandoah Valley Railroad has, in connection with the Norfolk & Western Railroad, agreed upon a plan of reorganization which has been endorsed by the bondholders' committee. It provides for a consolidation of the Shenandoah Valley Road with the Norfolk & Western after the new securities have been issued. The plan has been lodged with

the Mercantile Trust Co. for execution, and a purchasing committee, consisting of President Louis Fitzgerald, of that company, and a representative of the first and general bondholders, has been formed to carry out the agreements. Those agreements include a contract with bankers to furnish whatever money may be required to conduct the reorganization. The reorganization plan also provides for the issue of \$10,000,000 of 50-year 5 per cent. first mortgage gold bonds, \$4,500,000 preferred stock and \$2,500,000 common stock. The preferred and common stocks are to be transferred to the Norfolk & Western Railroad in consideration of certain guarantees. The holders of the present Shenandoah Valley Railroad first mortgage 7 per cent. bonds will receive par and full interest in new mortgage bonds, being at the rate of \$1.420 per bond; the holders of Shenandoah Valley general mortgage bonds pay an assessment of \$66 per \$1,000 bond and receive \$1.100 in Norfolk & Western preferred stock. The new bonds are to be guaranteed by the Norfolk & Western Railroad. Of the \$10,000,000 authorized, \$3,223,400 will be issued in taking up the present first mortgage bonds; \$4,276,000 will be used in paying off receivers' certificates car trust obligations for costs of reorganization, for double-tracking and improvements and equipment, and the remaining \$2,500,000 will be spent in constructing an extension from Front Royal to Washington, D. C., and for a terminal site in that city.

## The Cotton Oil Financial Plan.

The plan for providing a cash working capital for the American Cotton Oil Co., the successor to the Cotton Oil Trust, is made public. Subscriptions are invited by Winslow, Lanier & Co. and J. Kennedy Tod & Co. to \$4,000,000 ten-year 8 per cent. gold debenture bonds, the books to open next Saturday, and close not later than the following Tuesday. Simultaneous subscriptions will be received in London by the Anglo-American Debenture Corporation, Limited, and in Amsterdam by Wertheim & Gompertz. It is stated that after the allotment of the bonds the board of directors will include in its membership Edward D. Adams, John H. Inman, Emanuel Lehman, George Austin Morrison and R. T. Wilson, of this city; N. K. Fairbank, of Chicago, and Garret A. Hobart, of Paterson, N. J. These names include an element which is expected to help the Southern branch of the business, and hereafter there will be a more marked division between the financial and the strictly business management of the company. The company has prepared a full statement of the operations of the business from its inception, and explains frankly the decreased net profits of the last ten months as due to the hostile legislation encountered and the adverse conditions attending the reorganization from a trust into an incorporated company. The accumulated net profits are placed at \$4,574,649 and the cash and cash assets at \$1,936,743, exclusive of the value of the plant, etc. The object in negotiating the new debenture bonds is to relieve the company of the need of borrowing money in its daily operations, replacing in a permanent form the temporary loans necessary, on which the interest has equalled the rates fixed on the debenture bonds. The debentures take the place of the current debt without increasing its volume or interest charge, but, it is believed, will add to the security of the property and the facilitation of the business. The Central Trust Co. reminds holders of its transferable receipts that the privilege of receiving prior allotments extends only to actual stockholders in the Cotton Oil Co.—New York Tribune.

MESSRS. J. A. MAHER & CO., the well-known civil and topographical engineers, of Johnson City, Tenn., have published an excellent and valuable map of the South Appalachian region, which will shortly be placed on sale. They will issue topographic, geologic and economic editions separately, and will also have a map of the Alabama mineral district, besides special maps of small areas for special purposes, emphasizing details where necessary, but adhering strictly in general plan to the base. Maher & Co.'s work will be in general demand by those interested in Southern development.

**Buena Vista Notes.**

BUENA VISTA, VA., Sept. 8, 1890.  
*Editor Manufacturers' Record:*

Several Pennsylvania capitalists were here last week and purchased four lots, upon which they will erect a three-story brick house to be used as a manufactory for woodenwares. These men are in earnest, and gave assurances that the building would be put up immediately and the work begun without any delay.

The steel plant, the boiler works, the cassimere mill and the egg-crate manufactory are all grouped on the line of the railroads in the lower section of the town. The cassimere mill and the crate factory are both nearly completed, and work is about to be begun on the boiler works. When all of the industries get into operation Buena Vista will present a busy appearance.

Most of the lots recently sold have been in this section of the town, and there is no doubt but that the entire lower section of the town will soon be dotted with stone houses and other business marts.

There are now on file applications for the location of at least twenty additional industrial enterprises at Buena Vista. Considering the age of the town, there is no place in the South that has as many and as large manufacturing enterprises in operation and in course of erection. If any doubts have ever existed as to the permanency of the town, they have been long since dispelled. The town now has enough varied business interests to give it a population of 10,000 people within the next two years. New business houses and residences are daily being contracted for, and families are moving in as fast as they can be accommodated. Thousands of dollars are daily changing hands in real estate transactions, and people are coming in from nearly every section of the country.

**Southern Financial News.****NEW BANKS.**

Allensville, Ky.—It is reported that the Allensville Savings & Deposit Bank has been organized.

Arcadia, La.—The Arcadia State Bank has been organized with A. L. Atkins, president, and J. B. Talbert, cashier.

Atlanta, Ga.—Charter has been applied for for organizing the American Investment Co. with a capital stock of not less than \$100,000 or more than \$500,000.

Beattyville, Ky.—The capital stock of the Farmers' Bank, reported in last issue, is \$50,000.

Bedford City, Va.—It is reported that a loan and trust company will probably be organized.

Buena Vista, Va.—The Home Investment Co. has been organized with a maximum capital of \$50,000. W. T. Thom is president; J. E. B. Stuart, treasurer, and F. D. Coe, secretary.

Clifton Forge, Va.—The Construction & Loan Co., of West Clifton Forge, has been chartered with a capital stock of not less than \$15,000 nor more than \$300,000. C. L. Adams, of Lynchburg, is president, and J. Loyd, Jr., of Lynchburg, secretary and treasurer.

Dallas, Texas.—The Ninth National Bank has been organized with a capital stock of \$700,000. J. J. Carter is president, and J. Wood, Jr., cashier.

Hamilton, Texas.—The First National Bank is being organized with J. Dansby, Jr., cashier.

Jasper, Tenn.—The bank lately reported as projected has been organized with a capital stock of \$25,000. W. Byrne is president, and J. E. Thompson, of Manchester, cashier.

Lawrenceville, Va.—The Bank of Lawrenceville has been organized with a capital stock of \$100,000.

Luray, Va.—The Luray Improvement & Investment Co. has been organized.

Owensboro, Ky.—The Central Trust Co. has been organized with J. D. Atchison, president; R. Brodie, secretary, and R. H. Glover, treasurer.

Richmond, Va.—The West End Park Loan & Trust Co. has been organized with a capital stock of \$500,000. H. N. Copp is president, and S. D. Luckett, secretary.

Ronoke, Va.—The Home Building & Conveyance Co. has increased its capital stock from \$100,000 to \$200,000.

Savannah, Ga.—The Franklin Savings & Security Co. has been organized with a capital stock of \$100,000. C. P. Miller is president, and H. T. Moore, treasurer.

Senatobia, Miss.—The Citizens' Bank is being organized with a capital stock of \$25,000. E. H. Granger is president, and V. P. Still, cashier.

Staunton, Va.—The Virginia Stock Exchange has been chartered with a capital stock of \$25,000. Ernest Howard, of New Orleans, La., is president; R. C. Caldwell is secretary, and W. J. Perry, treasurer.

Troy, Texas.—A new bank has, it is reported, been organized. D. N. McGlassar and M. Meadgen are said to be the managers.

Washington, D. C.—The Chesapeake & Columbia Investment Co. has been chartered with a capital stock of \$100,000. T. M. Smith is president; T. D. Keleher, secretary, and N. H. Shea, treasurer.

Yazoo City, Miss.—Another new bank with a capital stock of \$75,000 is projected. W. D. Lawson can give information.

Yazoo City, Miss.—The Savings Bank of Yazoo City has been chartered with a capital stock of \$25,000. J. H. D. Haverkamp, T. H. Campbell, D. A. Swayze and others are among the incorporators.

Knoxville, Tenn.—The Knoxville Belt Railroad Co. has given a mortgage for \$50,000 to the London & New York Investment Co.

The Denison & Washita Valley Railroad Co. (office, Denison, Texas) has filed a resolution authorizing the issuance of first mortgage construction and equipment bonds to the amount of \$20,000 per mile.

**Foreign Exchange Quotations.**

ALEXANDER BROWN & SONS.

BALTIMORE, September 10, 1890.

Sterling quiet.	Commercial.
60 days..... 48 1/2%	48 1/2% @ 48 1/2%
3 days..... 48 5/8%	
France.....	Commercial.
60 days..... 52 1/2%	52 1/2% @ 52 1/2%
3 days..... 51 3/4%	
Reichmarks.....	Commercial.
60 days..... 94%	94% @ 94%
3 days..... 95%	
Guilders.....	Commercial.
60 days..... 40 1-16	40 1-16 @ 40 1-16
3 days..... 40 1/4	40 1/4 @ 40 1/4

**Baltimore Stock Exchange Quotations.**

Reported by ALEXANDER BROWN & SONS, Bankers, Baltimore.

BALTIMORE, Sept 10, 1890.

	BID.	ASKED.
Virginia 6's Consols C	52	52
Virginia 3's, new	68 1/2	69 1/2
N. Carolina 4's	99 1/2	100
Norfolk Wat 7 1/2's C	130	130 1/2
Baltimore & Ohio	105 1/2	106
Northern Central	68 1/2	69
Charl. & Aug. 1st 7's	120	120 1/2
B. & O. Extended 4's	101	101 1/2
Pitts. & Con. 1st 7's	116 1/2	117
Northern Central 4 1/2's	116 1/2	117
Northern Central 6's (series A)	109	110
Ga. Car. & N. 5's	102 1/2	103
Atlanta & Char. 1st 7's	121	121 1/2
Atlanta & Char. Income 6's	106	106 1/2
Col. & Green. 1st 6's	106 1/2	107
Va. Midland 5th 5's	101 1/2	102
Charlotte, C. & Aug. 1st 7's	108	108 1/2
West Va. Central 1st 6's	109 1/2	110
Ga. Pacific 1st 6's	111 1/2	112
West. Nor. Car. Cons'd 6's, Gold	99	100
Cape Fear & Y. Valley 6's, A	106	106 1/2
Cape Fear & Y. Valley 6's, B	103	103 1/2
Consol'd Gas Stock	50 1/2	51 1/2
Consol'd Gas Bonds 6's	115	115 1/2
Canton Co.	52	53

**Southern Securities BOUGHT AND SOLD.**

We Buy Total Issues of City, County, Water Company and Street Railroad

**BONDS**

Correspondence Solicited.

**N. W. Harris & Co. BANKERS,**

163 & 165 Dearborn St., Chicago, 70 State St., Boston.

**Important to All Corporations.**

Every Incorporated Company should USE KAUFFMAN'S Copyrighted Forms of Improved Record Book, Transfer Book, Stock Register, Stock Ledger and other valuable Books. Write for Descriptive Circular. Address

**CORPORATION BOOK CO.**  
Room 35, Lucas Bldg., 1326 Chestnut St., Philadelphia, Pa.

**WANTED.—A PARTNER WITH EXPERIENCE AND SOME CASH** to invest in manufacture of FURNITURE AND COFFINS, at a point in West Virginia where lumber is cheap. I have \$25,000 to invest.

Address  
"F. P. S."  
care Manufacturers' Record, Baltimore.

**FREDERIC TAYLOR & CO.**  
**Bankers and Brokers,**  
84 BROADWAY,  
NEW YORK CITY.  
Members of the New York Stock Exchange.

**P. J. GOODHART & CO.**  
(Members of the New York Stock Exchange.)  
24 BROAD STREET, NEW YORK.

Orders executed in New York and Boston for buying and selling stock of the

**Anniston City Land Co.**  
We are prepared to carry same on \$10 per share MARGIN.  
We make a specialty of all  
**Southern Securities.**

**JOHN L. WILLIAMS & SON, BANKERS.**  
—RICHMOND, VA.

Our Manual of Investments for 1890, the largest work of the kind published by any banking house in America, (406 pages, octavo, cloth,) may be had without charge by clients, correspondents and those expecting to do business with us; by others at \$2 per copy.

**Richmond Stock Exchange Quotations.**

Reported by JOHN L. WILLIAMS & SON, Bankers, Richmond.

RICHMOND, VA., September 9, 1890.

	BID.	ASKED.
North Carolina 4's, 1910	99	100
North Carolina 6's, 1910	127 1/2	128
Virginia New 3's, 1932	68	69 1/2
Danville 5's	100	103
Lynchburg, Va., 5's, 1915	103	104
Petersburg, Va., 5's, 1918	103	104
Petersburg Railroad Class B 6's, 1926	110	113
Richmond, Va., 5's, 1922	110	113
Atlanta & Charlotte Ry., 1st 7's, 1907	120	123
Atlanta & Charlotte G'd 6's, 1900	105 1/2	107
Char. Col. & Aug. R.R. Gen. 6's, 1932	109	112
Georgia Pacific Ry. 1st 6's, 1922	110	113
Georgia Pacific 2d 5's, 1923	77 1/2	78 1/2
Ga. Pacific Income, 5's	26	26
Petersburg Railroad Class A 5's, 1926	104	105
Petersburg Railroad Class B 6's, 1926	104	105
Rich. & Danville R. R. Gold 6's, 1915	115 1/2	116
West. N. Car. R. R. G'd 6's, 1914	99	101
Northwestern N. Car. R. R. 1st 6's	102	103
Atlanta & Charlotte R. R. Stock	97	98
North Carolina Railroad Stock	97	98
R. F. & Pot. R.R. Div'd Obligations	113 1/2	114
Virginia Midland Railway Stock	52 1/2	53
Virgin Iron & Steel Co. Stock	90	92 1/2
Sloss Iron & Steel Co. 1st 6's	90	92 1/2
Sloss Iron & Steel Co. 2d 6's	90	92 1/2

**ALEX. BROWN & SONS**

ESTABLISHED 1811.

Cor. Baltimore and Calvert Streets, BALTIMORE, MD.

—AND—

**BROWN BROTHERS & CO.**

New York, Philadelphia and Boston

**Foreign and Domestic Bankers**

AND MEMBERS OF THE  
Baltimore, New York and Philadelphia  
Stock Exchanges.

(Private wire between Baltimore, Boston Philadelphia and New York.)

Interest allowed on deposits of Banks, Bankers, Corporations and Individuals (by agreement). Railroad, Municipal and other Loans Negotiated.

**BUY AND SELL BILLS OF EXCHANGE**

on Great Britain and Ireland, France, Germany, Holland, British West Indies and other foreign points.

**Issue Commercial and Travelers' Letters of Credit.**

IN STERLING, available in any part of the world; and IN DOLLARS, for use in this country, Canada, Mexico, the West Indies and South America.

**Make Cable and Telegraphic Transfers of Money.**

Drafts Collected in all parts of the World.

**BROWN, SHIPLEY & CO., LONDON.**

**NEW KODAKS.**

"You press the button, we do the rest."

Seven New Styles and Sizes  
ALL LOADED WITH TRANSPARENT FILMS.

For Sale by all Photo. Stock Dealers.

**THE EASTMAN COMPANY,**

Send for Catalogue. ROCHESTER, N. Y.

# Mineral Properties Wanted.

Owners or agents of large properties in the South, especially of coal, iron and timber lands, who desire to sell or secure their development through outside capital are invited to send me brief, clear statements of the location, extent, resources and price of their properties.

The most careful and conservative statements of facts, and only facts, is asked.

Having had long experience in handling large American properties in London, and also in this country, I am in a position to secure investments in gilt-edge Southern mineral or timber lands.

Address  
**"INVESTOR,"**  
Care Manufacturers' Record,  
Baltimore, Md.



## SOUTHERN STOCKS.

OFFICIAL QUOTATIONS BIRMINGHAM STOCK EXCHANGE.

Corrected Weekly by MARTIN &amp; LEEDY, Stock and Bond Brokers, and Members Birmingham Stock Exchange.

SATURDAY, SEPTEMBER 6, 1890.

STOCKS.		LAST DIVIDEND.			
BANKS.	Organized.	Capital	Declared.	Per Cent.	Bid. Asked.
Alabama National	1886	\$500,000	July '90	a 4	111 116
American National	1887	250,000	July '90	a 4	100
Bank of Attalla	1889	50,000	July '90	a 5	85 1/4
Berney National	1886	300,000	July '90	a 5	127 1/2
Birmingham National	1887	250,000	July '90	a 3	97
Central Savings	1889	50,000	July '90	.....	.....
City National	1889	100,000	July '90	.....	175
First National	1884	250,000	July '90	a 6	154
First National Bank of Gadsden	1887	50,000	July '90	a 6	145
Jefferson County Savings	1885	150,000	July '90	a 6	145
Birmingham Trust & Savings Co.	1887	50,000	July '90	a 3	108
Matual Loan & Trust Co.	1888	50,000	July '90	.....	100
People's Savings Bank & Trust Co.	1888	50,000	July '90	a 4	115
RAILROADS.					
Birmingham Union Railway Co.	1887	1,000,000	.....	.....	24
Birmingham & Ensley Railway Co.	1887	500,000	.....	.....	35
North Birmingham Street R. R. Co.	1887	65,000	.....	.....	50
Highland Avenue & Belt R. R. Co.	1887	1,000,000	.....	.....	45
South & North Alabama R. R. Co.	.....	.....	.....	.....	30
MISCELLANEOUS.					
Avondale Land Co.	1884	150,000	Oct., '88	.....	.....
Aniston City Land Co.	1887	3,000,000	July, '87	q 4	57 1/2
Alabama Coal & Iron Co.	1890	1,000,000	.....	.....	100
Alabama-Cannelton Coal & Coke Co.	1886	500,000	.....	.....	23
Alabama Rolling Mill Co.	1887	250,000	.....	.....	60
Bessemer Land Co.	1887	2,500,000	May, '87	q 2 1/2	34 1/2
Birmingham Mining & Mfg. Co.	1887	150,000	Mch., '87	q 3 1/2	65
Birmingham-Ensley Land Co.	1886	450,000	.....	.....	5
Birmingham Ice Factory	1886	85,000	July, '89	a 10	105
Birmingham Water Works Co.	1887	500,000	.....	.....	75
Birmingham Soap Works Co.	1886	50,000	.....	.....	22
Brooklyn Land Co.	1886	1,400,000	.....	.....	30
Birmingham Furnace & Mfg. Co.	1886	1,500,000	.....	.....	16
Camille Gold Mining Co.	1887	1,500,000	.....	.....	70
Cahaba Coal Mining Co.	1887	1,400,000	.....	.....	15
Chattanooga East End Land Co.	1887	1,000,000	.....	.....	25
DeBardleben Coal & Iron Co.	1887	4,000,000	.....	.....	70
Decatur Land Imp. & Furnace Co.	1887	5,000,000	.....	.....	13
Decatur Mineral Land Co.	1887	350,000	Oct., '87	q 3	22 1/2
Elyton Land Co.	1871	300,000	Nov. 10, '87	q 2 1/2	925
Edison Electric & Illuminating Co.	1886	100,000	July, '89	a 4	102
East Birmingham Land & R. R. Co.	1886	1,022,800	.....	.....	11 1/2
East Lake Land Co.	1886	200,000	June, '87	q 50	80
Ensley Land Co.	1886	10,000,000	.....	.....	9
Enterprise Manufacturing Co.	1886	100,000	.....	.....	22 1/2
Eureka (Furnace) Co.	1886	100,000	.....	.....	12 1/2
Florence Land & Mining Co.	1886	3,000,000	April, '89	q 1	22 1/2
Gadsden Land Co.	1887	3,000,000	April, '87	q 1	5 1/2
Gate City Land Co.	1888	300,000	.....	.....	30
Hecia Coal Co.	1888	300,000	.....	.....	10
Henderson Steel & Mfg. Co.	1887	100,000	.....	.....	85
Jefferson Building & Improvement Co.	1887	150,000	.....	.....	65
Jagger-Townley Coal & Coke Co.	1887	350,000	.....	.....	8 1/2
Leeds Land Co.	1887	150,000	.....	.....	32
Mag. Ellen Coal & Mining Co.	1887	100,000	.....	.....	100
Mary Lee Coal & Railway Co.	1888	500,000	.....	.....	20
North Birmingham Land Co.	1886	700,000	.....	.....	60
Smithfield Land Co.	1886	850,000	.....	.....	3 1/2
Sloss Iron & Steel Co.	1887	4,000,000	.....	.....	40 1/2
South Aniston Land Co.	1887	750,000	Apr. 15, '90	h 1	16
Sheffield Coal & Iron Co.	1884	1,000,000	Mch., '87	q 5	35
Tompson Brick Co.	1887	30,000	Feb., '88	q 5	90
Tennessee Coal & Iron Co.	1887	9,000,000	May 15, '87	.....	45 1/2
Tennessee Coal & Iron Co., pref.	1887	1,000,000	.....	.....	100
Tuscaloosa Coal, Iron & Land Co.	1887	1,000,000	.....	.....	22 1/2
Vulcan Coal & Coke Co.	1886	100,000	.....	.....	5
West End Land Co.	1886	175,000	.....	.....	80
Woodstock Iron Co.	1887	3,000,000	.....	.....	32
BONDS.					
Alice Furnace	.....	Amount Outstanding.	INTEREST.	Bid.	Asked
Birmingham Gas & Electric Light Co.	.....	300,000	Rate Per Cent.	103	.....
Birmingham Union Railway Co.	.....	340,000	.....	92 1/2	92 1/2
Birmingham Water Works	.....	400,000	.....	108	100 1/2
Cahaba C. & M. Co., 1st Mortgage	.....	750,000	.....	111	116
Caldwell Hotel	.....	150,000	.....	99	.....
Elyton Land Co., Trust Bonds	.....	2,400,000	.....	97 1/2	.....
Eureka (Furnace) Co.	.....	400,000	.....	109	102 1/2
Henderson Steel & Mfg. Co.	.....	50,000	.....	75	.....
Mary Pratt Furnace	.....	100,000	.....	100	.....
Sloss Iron & Steel Co., 1st Mortgage	.....	2,000,000	.....	91	93
Williamson Iron Co.	.....	60,000	.....	65	100 1/2
Tennessee Coal, Iron & R. R. Co.	.....	.....	.....	.....	.....
Tennessee Division	.....	1,254,000	6	96 1/2	.....
Birmingham Division	.....	3,640,000	6	100	.....

EXPLANATION.—a—For six months. q—Only dividend declared since organization. x—This company declared 5 per cent February 1 also. z—Total dividends paid, 49 per cent. l—Dividend for one year, ending July 1, 1889. E—Sold hereafter Ex 15 per cent dividend. o—Dividend 3 per cent paid in May, '87, also October 1. n—Fifty per cent. Dividend on Union R. R. Stock. h—Payable October 15, 1889. f—A 5 per cent. Dividend has been paid quarterly since organization. w—For dividends refer to the company. \* \* May 6, '87, 50 per cent cash; May 10, '87, 50 per cent cash; Sept. 14, '87, 50 per cent cash; Oct. 10, '87, 10 per cent cash; Oct. 10, '87, 10 per cent cash; Nov. 10, '87, 10 per cent cash; Nov. 10, '87, 1200 per cent. In Elyton Land Company's Trust Bonds.

## The Southern Investment Co.

J. J. BURNS, Manager. 167 Dearborn St., Chicago, Ill.

## BUY AND SELL SOUTHERN REAL ESTATE,

City and Town Property. Mineral and Timber Lands, Mines, Mills, Furnaces and Factories. Colonies Established.

Correspondence Solicited.

WILSON, COLSTON & CO. (Members of Baltimore Stock Exchange.)  
BANKERS.

216 East Baltimore Street, Baltimore, Md.

Investment and Miscellaneous Securities a specialty, and large lines handled. Exceptional facilities for dealings in all classes of Southern Bonds. Loans on Collateral Securities negotiated. Quotations and information furnished on application, and correspondence invited.

J. Wm. MIDDENDORF.

Members Baltimore Stock Exchange.

Wm. B. OLIVER.

## MIDDENDORF, OLIVER &amp; CO.

## BANKERS AND BROKERS,

No. 213 E. German Street, [SEYER BUILDING.] Baltimore, Md.

Stocks and Bonds Bought and Sold on Commission. Special attention given to Municipal and other Investment Loans. Dealers in Foreign Exchange. Drafts on Europe and Letters of Credit furnished.



DESKS,  
Chairs,  
Office Furniture  
SEND FOR CATALOGUE.  
DEBRY & KILMER DESK CO.  
Salesrooms,  
opp. Lowell Depot,  
30 Causeway St., Boston.

BANK OFFICE  
AND STORE FIXTURES  
THE TERRY MFG. CO.  
NASHVILLE  
TENN.

## EATON &amp; BURNETT'S COLLEGE.

And School of Short-Hand and Typewriting.

## LEADING BUSINESS TRAINING SCHOOL.

INDORSED BY PROMINENT BUSINESS MEN, MERCHANTS, BANKERS, PATRONS, GRADUATES AND STUDENTS.

DAY SCHOOL NOW OPEN. NIGHT SCHOOL OPENS OCT. 1st.  
The best place for obtaining a knowledge of Book-keeping, Penmanship, Commercial Spelling, Arithmetic, Correspondence, Commercial Law, Rapid Calculations, Business Practice, Phonography, Typewriting, Telegraphy, &c.  
The high reputation of the College will be sustained by increased advantages the present year.  
Please call or send for circular. Address

EATON & BURNETT,  
N. E. COR. BALTIMORE AND CHARLES STS., BALTIMORE, MD.

## TIME IS MONEY.

RECEIVED



The above is a fac-simile impression given by the Automatic Time Company's Time Stamp at 12.20 P. M., May 24, 1890.

Simple. \*  
\* Useful,  
Ornamental.

Indispensable for Office and  
Factory Use.

Send for Illustrated Descriptive  
Pamphlet.

Perspective View.

## THE AUTOMATIC TIME STAMP CO.

71 Sudbury St., Boston, Mass., U. S. A.

## THE CAMPBELL COTTON COMPRESS

Is sold on the following GUARANTEE:



DENSITY Obtained  
Equal to Any.  
COST of Plant Less  
Than Any.  
EXPENSE of Running  
Half of Any  
First-Class Compress.

Correspondence Solicited.

The Campbell Cotton  
Compress Co.

109, 111, 113 & 115 E. Front St.  
CINCINNATI, O.

# CONSTRUCTION DEPARTMENT.

**WE PUBLISH, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.**

\*Means machinery is wanted, particulars of which will be found in "Machinery Wanted" columns.

†In correspondence relating to matters reported in this paper, it will be a favor if it is stated that the information was gained from the MANUFACTURERS' RECORD.

## ALABAMA.

Albertville—Land.—Robert Ober, of Baltimore, Md., is president; A. J. Little, of Rome, Ga., vice-president, and W. T. McCord, secretary, of the Albertville Land & Improvement Co., reported in last issue.

Ashford—Saw Mill.—J. G. H. Quattlebaum may add new machinery to his saw mill.

Bessemer—Ice Factory.—The Bessemer Steam Bottling Works will, it is reported, add a 10-ton ice factory to its plant.

Birmingham—Plow Works.—The Birmingham Agricultural Works will, it is reported, enlarge its plow works, and put in new machinery for the manufacture of all kinds of agricultural implements.

Birmingham—Marble Works.—The Birmingham Marble & Stone Co. will, it is reported, put new machinery in its marble works.

Birmingham—Cotton Factory.—A cotton factory will, it is reported, be erected. Randolph Peyton can give information.

Birmingham—Iron Furnace.—The Henderson Steel Co. will probably increase its capital stock \$100,000, to erect an additional iron furnace, blooming train, &c.

Bluffton—Car-wheel Works.—The Bluffton Car Wheel Co. is the name of the stock company previously reported as organized to build car wheel works.

Cedar Bluff—Land, &c.—The Cedar Bluff Land, Mining & Manufacturing Co., reported in last issue, has a capital stock of \$200,000.

Daleville—Wagon Factory.—The Murphy Wagon Manufacturing Co., with a capital stock of \$10,000, has been organized to establish the wagon factory mentioned in last issue.

Greensboro—Cotton Gineries.—The Alabama Farmers' Alliance contemplates the establishment of co-operative cotton gineries.

Greenville—Ice Factory.—The Greenville Ice & Storage Co. has been organized, as stated in last issue, and will erect a 10-ton ice machine.

Gordon—Woodworking Factory.—D. Williams & Co. will, it is stated, put in new machinery for the purpose of manufacturing barrel headings, staves, laths and shingles.

Gurley—Broom Factory.—A broom factory will, it is reported, be erected.

Iron City—Saw Mill.—W. A. Graham is, it is reported, erecting a saw mill.

Julian—Planing Mill, &c.—J. C. & C. B. McLaren will, it is stated, erect dry-kilns and increase the capacity of their planing mill.

Mobile—Brewery.—A \$15,000 stock company has, it is stated, been organized with L. C. Hart, of Savannah, Ga., president, and A. S. Lyons, secretary, to erect a brewery.

Montgomery—Electric-light Plant, &c.—P. B. Bibb, W. H. Geaner, C. G. Abercrombie and others have incorporated the Ball Light & Power Co. for the purpose of erecting an electric-light and power plant.

Piedmont—Iron Mines.—The De Bardeleben Coal & Iron Co., of Bessemer, Ala., has, it is reported, purchased the Frog mountain iron ore property for \$100,000, and will develop same.

Piedmont—Canning Factory.—The erection of a canning factory is projected. The Piedmont Land & Improvement Co. can give information.

St. Elmo—Saw Mill.—J. W. and E. D. Laurendine will, it is stated, erect a saw mill.

Talladega—Water Works, &c.—The Talladega Gas Light & Water Co. will hold a meeting on September 18 to consider an increase of its capital stock.

Troy—Bridge.—J. B. Ewing has, it is stated, received contract for building a bridge across Little Patsaliga river.

## ARKANSAS.

Blanchard Springs—Lumber Mill.—W. L. Risinger will put axe-handle machinery in his lumber mill, as lately stated.

Camden—Bottling Works.—John Austin, M. W. Squire and J. C. Turner have established the bottling works recently mentioned.

Camden—Planing Mill.—It is stated that the Camden & Alexandria Railroad Co. will erect a planing mill.

Camden—Planing Mill.—The Washito Lumber Co. is, it is stated, putting new machinery in its planing mill.

Hazen—Creamery.—The creamery previously mentioned has since been erected and is in operation.

Ozark—Wagon Factory.—Greer & Switzer will establish, it is reported, a wagon factory.

## FLORIDA.

Apalachicola—Ice Factory.—The organization of a stock company to erect another ice factory is talked of.

Bartow—Phosphate Mines.—Mr. Whitaker has, it is stated, organized a \$250,000 stock company for the purpose of developing phosphate mines.

Callahan—Artesian Well.—The sinking of an artesian well is talked of.

Callahan—Grist Mill, Gin, &c.—It is rumored that the Farmers' Alliance will organize a stock company for the purpose of erecting a rice mill, grist mill and cotton gin.

Fernandina—Phosphate Works.—Phosphate works to cost about \$42,000 will probably be erected. Mr. Bushnell can give information.

Pensacola—Sash, Door and Blind Factory, etc.—The Builders' Supply & Manufacturing Co. has, it is stated, purchased the sash, door and blind factory, dry-kilns, etc., of Messrs. Harvey & Hilliar, and will operate same and probably put in machinery for the manufacture of furniture.

Tampa—Ice Factory.—The Tampa Ice Co. will, it is stated, rebuild its ice factory.

## GEORGIA.

Americus—Barrel Factory, etc.—It is stated that the Standard Oil Co. will shortly commence the erection of its barrel factory and oil warehouse previously mentioned.

Americus—Artesian Well.—James Mulligan, of Savannah, will doubtless receive contract to sink an artesian well for the water works recently mentioned.

Americus—Soda Water Factory.—J. R. Hudson & Co. will, it is stated, put new machinery in their soda water factory.

Athens—Ink Factory.—John Price contemplates starting an ink factory.

Athens—Paper Mill.—The Pioneer Paper Manufacturing Co. is reported as putting paper bag machinery in its paper mill.

Atlanta—Paving.—Parkhurst, Warner & Tye have received contract to pave Gordon street at \$1.65 a square yard.

Atlanta—Novelty Works.—C. R. King, W. T. Besonette, W. C. Smith and others have organized the Atlanta Novelty Manufacturing Co. to manufacture wood and metal novelties. The capital stock is \$300,000.

Atlanta—Steel Plant.—It is stated that a Canada steel manufacturer will remove his plant to Atlanta. J. M. Brosius can give information.

Atlanta—Water Works.—If the Supreme Court decides that the election recently held for the issuance of \$250,000 of bonds for water works is illegal, then a new election will be held on October 14th for the same purpose. A resolution has been introduced in the city council directing an amendment of the city charter, so as to submit to vote the further issue of \$350,000 of bonds for new water supply.

Atlanta—Water Works.—J. T. Glenn will receive proposals until October 1st for the construction of the water works mentioned in last issue.

Atlanta—Land.—The Windsor Park Land Co., recently reported, has F. P. Rice as president, H. E. W. Palmer, vice president, and F. W. Cole, secretary.

Boston—Phosphate Works.—Dunwoody Jones, of Atlanta, lately mentioned as purchasing for a company the P. Fay property of 134 acres of land, is reported as to erect \$150,000 phosphate works in Thomas county.

Brinson—Lumber Mill.—C. M. Reed is, it is stated, erecting a lumber mill.

Brunswick—Broom Factory.—Charles Watts, of Atlanta, will, it is reported, establish a broom factory in Brunswick.

Brunswick—Bottling Works.—J. A. McDuffie, C. P. Goodyear, A. B. Rowe and others have incorporated the Artesian Water Cure Co., with a capital stock of \$55,000, for the purpose of establishing mineral water bottling works.

Brunswick—Variety Works.—M. Lucree and W. H. Cole will, it is stated, erect variety works.

Buena Vista—Ice and Fertilizer Factory.—The Buena Vista Manufacturing Co. will, it is reported, erect an ice factory, and contemplates the erection of a fertilizer factory.

Buena Vista—Brick Works.—The Buena Vista Improvement Co. has been organized with C. H. McCall, president, and J. W. Roberts, secretary, to operate a brick-yard. The capital stock is \$10,000.

Buena Vista—Electric-light Plant and Water Works.—The legislature will, it is reported, be petitioned for authority to issue bonds for the construction of water works and the erection of an electric-light plant.

Cartersville—Furniture Factory.—The Cartersville Land & Manganese Co., previously referred to, has, it is reported, made a contract for the location of a furniture factory by New England parties.

Cordele—Shoe Factory.—The Cordele Shoe Factory, mentioned in last issue, will increase its capital stock to \$100,000 and double the capacity of its factory.

Echodell—Planing Mill.—Duke & Bivings have, it is stated, established a planing mill.

Fort Valley—Laundry.—A stock company is, it is stated, being organized to erect a steam laundry.

Gainesville—Ice Factory, &c.—Frederick Balcom will, it is stated, organize a stock company to erect an ice factory and cold-storage warehouse.

Gainesville—Cotton Factory.—The Gainesville Cotton Manufacturing Co. has, it is stated, amended charter, changing its name to the Georgia Manufacturing Co.

Gainesville—Harness and Saddle Factory.—Z. T. Castleberry is president; J. W. Oslin, vice-president, and A. R. Smith, secretary, of the Gainesville Harness & Saddle Manufacturing Co., previously reported. The capital stock is \$95,000.

Holton—Cotton Gin, &c.—A Macon company will, it is stated, erect a cotton gin and grist mill.

Macon—Machine Shops.—The Georgia Southern & Florida Railroad Co. will erect machine shops to accommodate 1,000 miles of railroad.

Milledgeville—Laundry.—A laundry will, it is stated, be established.

Quitman—Cotton Gin and Grist Mill.—Alexander Box has, it is stated, erected a cotton gin and grist mill.

Rochelle—Artesian Well.—It is reported that an artesian well will be sunk.

Rome—Excelsior Factory, &c.—The Towers Excelsior & Ginney Co., reported in last issue as incorporated, is a consolidation of the North Georgia Excelsior Works and the Rome Steam Ginney, both already in operation.

Rome—Water Works.—The East Rome Water Works Co. has, it is stated, received contract to supply the city with water.

Sumter County—Timber Lands, &c.—H. R. Johnson, J. B. Felder, F. A. Hooper and others have incorporated the Yellow Pine Investment Co. to develop timber lands, &c.

Thomasville—Cigar Factory.—T. L. Humphreys is reported as to start a cigar factory.

## KENTUCKY.

Ashland—Steel Plant.—Ironton Kelly, of Ironton, Ohio, is president; John Russell, Sr., vice-president, and Mr. Burr, of Ironton, O., secretary, of the Ashland Steel Co., lately reported. The capital stock is \$1,000,000.

Covington—Brass Foundry.—The Robertshaw Brass Foundry Co. has been incorporated by T. S. Robertshaw and J. C. Miller, of Cincinnati, O.

Fort Jefferson.—The Middlesborough Town Co., of Middlesborough, in a letter to the MANUFACTURERS' RECORD, denies the report mentioned in last issue that it had purchased the town of Fort Jefferson.

Middlesborough—Bridge.—D. N. Mason will receive bids until October 1st for the construction over Yellow creek canal of an iron bridge 100 feet wide, 60 feet long, 60-foot roadway, and with two 20-foot sidewalks.

Middlesborough—Rock Quarry.—Stevens & Scanlan are developing a rock quarry near Middlesborough, as reported in last issue.

Newport—Iron and Steel Works.—It is rumored that the Northern and Covington capitalists recently mentioned as having purchased the New-

port Iron & Steel Works, will improve and operate same, and also add foundry and machine shop. Probably incorrect, as it has been reported that the works will be removed.

## LOUISIANA.

Natchitoches—Hedge Fences.—The hedge fence company previously mentioned has been organized as the Red River Hedge Co. with A. E. Lemey, president; A. E. Sompayroc, vice-president, and M. M. Hyams, secretary. The capital stock is \$70,000.

Plaquemine—Ice Factory, etc.—The Plaquemine Ice & Cold Storage Co., Limited, recently reported as organized, has been incorporated with a capital stock of \$25,000.

## MARYLAND.

Annapolis—Gashouse.—The Annapolis Gas Co. will erect, it is reported, a gashouse.

Baltimore—Pottery.—Edwin Bennett, J. L. Sullivan, W. T. France and others have incorporated the Edwin Bennett Pottery Co. with a capital stock of \$80,000.

Baltimore—Publishing.—The Baltimore Globe Co., publishing a newspaper, has been incorporated in New Jersey with a capital stock of \$100,000.

Baltimore—J. Batory & Co. contemplate putting in a 50 horse-power boiler; the Baltimore Waste Co. a 100 horse-power boiler, and T. R. Cook a 20 horse-power boiler.

Baltimore—Flint Mill.—The Patapsco Flint Mill Co., reported in last issue, already has a flint mill in operation.

Frederick—Canning Factory.—It is rumored that another canning factory will be erected.

Gorsuch's Mills—Bridge.—J. M. Buckley has, it is stated, received contract for building the bridge at Gorsuch's Switch.

## MISSISSIPPI.

Greenwood—Improvements.—The city is considering the issuance of \$20,000 of bonds for improvements.

Natchez—Pipe Line.—The Lee Oil Works is constructing a pipe line, as stated in last issue.

Vicksburg—Cotton Mills, etc.—There is talk of organizing a co-operative association with a capital stock of \$500,000 for the purpose of erecting cotton and woolen mills, furniture factories, &c.

## NORTH CAROLINA.

Asheville—Woodworking Factory.—The Carolina Woodworking Co. has been organized with a capital stock of \$12,000.

Asheville—Gas Wells, &c.—The Asheville Natural Gas & Mining Co. has been organized with W. O. Wolfe, president; H. C. Hunt, vice-president, and J. B. Bostix, secretary, to sink gas wells. The capital stock is \$25,000.

Asheville—Electric-light Plant.—The People's Light, Heat & Power Co., lately reported, has, it is stated, let contract to G. B. Shaw, of Eau Claire, Wis., and L. N. Cox, of Washington, D. C., for the erection of a \$40,000 electric-light plant.

Durham—Carriage Factory.—R. T. Howser & Bro. will, it is stated, erect the carriage factory lately mentioned.

Durham—Tobacco Factory.—The American Tobacco Co. is erecting an addition to its tobacco factory 123x157 feet.

Durham—Land.—B. L. Duke has, it is stated, purchased a tract of land near Durham for \$22,000.

East Durham—Sorghum Mill.—W. J. Wyatt is reported as having established a sorghum mill.

Gibsonville—Flour Mill, &c.—The Eureka Mill Co., lately mentioned as organized, has been incorporated by J. A. Davidson, J. L. Whitsett, M. L. Fogleman and others for the purpose of erecting a flour and corn mill, lumber mill, etc.

Greensboro—Furniture Factory.—The Greensboro Furniture Co., recently mentioned, has been organized by S. S. Brown, C. W. Carr, W. I. Ridge and others with a capital stock of \$10,000.

Henderson—Factory.—Louis Ginter, of Richmond, Va., has awarded contract for the erection of a five story factory 50x125 feet.

Marion—Street Improvements.—The city will probably issue \$10,000 of bonds for street improvements.

New Berne—Canning Factory.—A Greenabum, of Seaford, Del., will, it is stated, establish an oyster canning factory.

New Berne—Canning Factory.—Moore & Brady's oyster canning factory is reported as being enlarged.

New Berne—Planing Mill.—C. J. Scheelky is reported as erecting a planing mill.

Oxford—Tobacco Factory.—A Richmond (Va.) syndicate is reported as negotiating for the erection of a \$200,000 tobacco factory in Oxford. The Oxford Land, Improvement & Manufacturing Co. can give information.



Raleigh-Tobacco Factory.—E. L. Harris, of Wilton, has, it is stated, made a proposition to organize a stock company to establish a smoking tobacco factory.

Raleigh-New Town, &c.—A manufacturing town will, it is stated, be built near Raleigh. The Secretary Board of Trade can give information.

Scotland Neck-Bottling Works.—The Panacea Springs Co., of Oxford, N. C., has purchased the Panacea springs, mentioned in last issue, and will start bottling works to place the water on the market.

Scotland Neck-Canning Factory.—The Farmers' Alliance contemplates the erection of a canning factory.

Winston-Land.—The North Winston Land & Improvement Co., reported in last issue as organized, has been incorporated with R. J. Reynolds president, and J. L. Patterson, secretary.

Winston-Tobacco Factory.—H. L. Riggins and Frank Gorrell will, it is stated, erect a tobacco factory.

#### SOUTH CAROLINA.

Blacksburg-Cotton Mill.—The Cherokee Manufacturing Co., previously mentioned, has increased its capital stock to \$100,000.

Charleston.—A. D. Cohen, J. G. Smith and J. S. Carey have incorporated the Smith Submarine Engineering & Stevedoring Co. for the purpose of submarine diving, and loading and unloading vessels.

Charleston-Mattress Factory.—The Charleston Mattress Manufacturing Co. will, it is stated, enlarge its mattress factory.

Charleston-Ice Factory.—John Bayer & Son will erect a 25 or 40-ton ice factory.

Chester County-Water-power and Cotton Factories.—The English syndicate reported in last issue as having purchased the water-power at the confluence of Fishing creek with the Catawba river, will, it is stated, develop the water-power and erect cotton factories at a cost of \$75,000.

Columbia-Lumber Mills, etc.—J. A. Peterkin and others have purchased 40,000 acres of swamp timber land, and will, it is stated, erect a lumber mill.

Darlington-Water Works.—The Darlington Water Works Co., previously reported, has been incorporated by C. S. McCullough, G. W. Brown, I. Lowenthal and others.

Eutawville-Timber Land.—The Santee River Cypress Lumber Co. is reported as negotiating for the purchase of 5,000 acres of timber land from the Congaree Lumber & Veneer Co.

Florence-Tobacco Factory.—A tobacco factory will, it is stated, be erected. F. W. Rogers, Jr., can give information.

Gaffney City-Pickle Factory.—W. M. Lipscomb will, it is stated, establish a pickle factory.

Graniteville-Kaolin Mines.—C. E. Sawyers, J. A. Stothart, W. G. Allen and others have incorporated the Southern Kaolin Co. with a capital stock of \$50,000 for the purpose of developing the kaolin mines previously reported.

Montmorenci-Artesian Well.—Chapman Bros., of Augusta, Ga., have, it is stated, received contract for sinking the artesian well of the South Carolina Railway Co.

Pickens C. H.—Bridge.—G. H. Crafts & Co., of Atlanta, Ga., have received contract at \$4,070 to rebuild the bridge across the Keowee river previously mentioned.

Spartanburg-Electric Light, etc.—The Spartanburg Gas, Electric Light & Power Co. will probably increase its capital stock to \$75,000.

#### TENNESSEE.

Bristol.—The Southwest Bristol Land Co., recently reported, has purchased 420 acres of land near Bristol and will lay it off in town lots.

Chattanooga-Brick Works.—H. A. Winters and G. W. Nelson have organized the Standard Pressed Brick Works to establish the brick works previously mentioned.

Chattanooga-New Town.—It is stated that the Arlington Land Co., lately reported as incorporated, will build a new town to be called Arlington.

Chattanooga-Candy Factory.—T. A. Davis will, it is reported, establish a candy factory.

Chattanooga-Sewer-pipe Works.—Charles Donahue has received contract for constructing a 2,000-foot pipe sewer on Tenth street.

Chattanooga-Cotton Mill.—It is stated that Jacob Peye is organizing a stock company to enlarge and operate the Chattanooga Cotton Mills.

Embsville-Iron Furnace.—The Pittsburgh Iron & Steel Engineering Co., of Pittsburgh, Pa., has, it is reported, received contract for constructing the blast furnace of the Embsville Iron Co., previously reported as to be built.

Gallatin-Cotton Mill.—Louis Reubin and S. W. Harland, of Louisville, Ky., and others have purchased the Gallatin cotton mill for \$20,000. Will put in additional machinery and operate same.

Greenville-Brick-yard.—J. H. Doughty will start a brick-yard.

Johnson City-Street Improvements, &c.—The city has decided by a popular vote to issue the \$50,000 of bonds previously mentioned.

Memphis-Power-house.—The United Electric Railway Co. will, it is stated, erect a power-house.

Nashville-Soda Works.—The Southern Soda Works, with F. T. Cummins president, and Irby Bennett, secretary, is reported as to erect soda works.

Pikeville-Rock Quarries.—Messrs. Chafer & Walker, of Bridgeport, Ala., have purchased nine acres of land in Pikeville and will develop rock quarries.

West Point-Iron Mines.—The West Point Mining & Manufacturing Co. has been organized at Florence, Ala., with W. A. Hudson, president; A. J. McGarr, vice-president, and Wade Allen, secretary, for the purpose of developing iron ore beds near West Point. The capital stock is \$40,000.

#### TEXAS.

Boerne-Artesian Well.—An artesian well will, it is stated, be sunk.

Brady-Grist Mill and Gin.—A grist mill and cotton gin have, it is stated, been erected.

Bridgeport-Coal Mines.—Coal mines will probably be opened near Bridgeport.

Burnett County-Silver Mines.—It is stated that silver mines are being developed.

Caldwell-Oil Mill.—An oil mill to cost about \$7,000, it is stated, being erected.

Chireno-Bridge.—A bridge is, it is stated, being built across the Atoc river.

Claude-Artesian Well, &c.—A. T. Levy, of Denver, Col., has, as lately stated, purchased a 40-acre tract of land near Claude for \$25,000 and is sinking an artesian well.

Coleman-Coal Mines.—Messrs. Malone & Gage, of Lampasas, have, it is reported, optioned 3,000 acres of coal lands from R. H. Overall and will develop same.

Coleman-Coal Mine.—Another coal mine will, it is stated, be opened near Coleman.

Cuero-Cotton-seed Oil Mill.—A. T. Schmidt and others, lately reported as erecting a cotton-seed oil mill, have incorporated the Cuero Cotton Seed Oil & Manufacturing Co. with a capital stock of \$25,000.

Dallas-Paper Mill.—A stock company may be organized to start a mill for the manufacture of paper from cotton husks.

Dallas-Implement Factory.—A party from Lansing, Mich., will, it is stated, erect an implement factory in Dallas. F. F. Lee Moreaux can give information.

Dallas-Furniture Factory.—A California firm will, it is stated, erect a \$50,000 furniture factory in Dallas. Leo Wolfson can give information.

Dallas-Wind-mill and Pump Factory.—An Iowa firm will, it is stated, move their wind-mill and pump factory to Dallas. Leo Wolfson can give information.

Dallas-Box Factory.—An Indiana firm will, it is stated, establish a factory in Dallas for the manufacture of boxes, egg cases, etc. Leo Wolfson can give information.

Denison-Brewery.—The Anheuser-Busch Brewing Co., of St. Louis, Mo., in a letter to the MANUFACTURERS' RECORD, denies the report that it contemplated erecting a brewery in Denison.

El Paso-Artesian Well.—R. T. Hill will, it is stated, sink an artesian well.

Fort Worth.—The Fort Worth Shoe & Leather Co. has been organized with J. E. Hearn, president; John Armstrong, vice-president, and J. D. Rainey, secretary. The capital stock is \$40,000.

Fort Worth-Stone Mill.—The stone mill lately mentioned will be removed from Wichita, Kans., by Ballance & Jaus, of that city.

Frost-Cotton Gin.—Suttle & Scarbrough are erecting the cotton gin mentioned in last issue.

Galveston-Tinware Factory.—The Galveston Tinware Manufacturing Co., lately reported as incorporated, has A. B. Homer for president; L. V. Elder, vice president, and Thomas Keats, secretary.

Grand View-Cotton Gin and Brick-yard.—It is stated that a cotton gin has been erected and a brick-yard started.

Greenville-Cotton Compress.—E. W. Taylor, S. D. Rainey, L. A. Pires and others have incorporated the Greenville Compress & Manufacturing Co. with a capital stock of \$500,000.

Greenville-Creamery.—George S. Perkins has, it is stated, purchased the Greenville creamery.

Llano-Improvements.—The Llano Improvement Co. has amended its charter, increasing capital stock to \$3,000,000.

Lodi-Saw and Planing Mill.—A saw and planing mill is, it is stated, being erected.

Marble Falls.—The Marble Falls Ferry Co. has increased its capital stock to \$50,000.

Snyder-Grist Mill and Gin.—A cotton gin and grist mill are, it is reported, being erected.

Terrell-Artesian Well.—An artesian well will probably be sunk at the water works.

Waco-Cordage Factory.—Parties from Boston, Mass., will, it is stated, erect a cordage factory in Waco.

Waco-Crematory.—A garbage crematory will probably be erected. The mayor can give information.

#### VIRGINIA.

Bedford City-Sash, Door and Blind Factory.—The Greenwood Land Co. is reported as to establish a \$50,000 sash, blind and door factory.

Berkley-Barrel Factory.—The Farmers' Manufacturing Co., of Norfolk, will manufacture a patent barrel at the box factory of G. H. Frey. This is the barrel factory mentioned last week under Norfolk.

Blacksburg-Marble Quarries.—A \$100,000 stock company has been incorporated with R. T. Ellett, president; J. H. Felts, secretary, and Dr. W. B. Conway, treasurer, to develop black marble quarries.

Buena Vista-Woodenware Factory.—A woodenware factory will, it is stated, be erected in Buena Vista by Philadelphia parties. The Buena Vista Co. can give information.

Buena Vista-Furniture Factory.—A \$10,000 stock company is, it is stated, being organized to erect a furniture factory. The Buena Vista Co. can give information.

Buena Vista-Boiler and Engine Works.—The Engine & Boiler Works has been organized with A. K. Rarig, president; A. T. Barclay, vice president, and J. H. Millen, secretary, to erect the boiler and engine works recently reported.

Danville-Light and Heat.—It is stated that Danville capitalists are testing a new gas and heat producer, and if successful, will establish a plant.

Gladeville-Flour Mill.—A stock company will establish, it is reported, a flour mill.

Glasgow-Lead Mines.—Mr. Ezell is, it is stated, developing lead mines near Pan Alpine Heights.

Goshen-Iron Works.—The Woodcock Iron Works Co., of Auburn, N. Y., will, it is stated, move their iron works to Goshen.

Goshen-Tube and Pipe Works.—It is stated that the tube and pipe works lately mentioned as to be erected will be moved from Syracuse, N. Y.

Goshen-Machine Works.—The Keystone Machine Co., of Williamsport, Pa., will move its machine works to Goshen, as stated in last issue.

Luray-Boiler and Engine Works.—A boiler and engine works will, it is stated, be established. The Valley Land & Improvement Co. can give information.

Luray-Broom Factory.—A broom factory will, it is stated, be established. The Valley Land & Improvement Co. can give information.

Luray-Hardware Factory.—It is stated that a Northern company will establish a \$400,000 hardware manufacturing plant in Luray. The Valley Land & Improvement Co. can give information.

Lynchburg-Shoe Factory.—The Lynchburg Shoe Manufacturing Co., previously reported as organized, has been incorporated. The capital stock is to be not less than \$25,000 nor more than \$100,000.

Lynchburg-Land.—A land improvement company is reported as having purchased a tract of land from Mrs. G. W. Langhorne for \$30,000.

Marion-Lead and Silver Mines.—The Washington (D. C.) and Baltimore (Md.) parties mentioned in last issue, under Smyth county, are known as the Rye Valley Mining Co. and are, as stated, developing lead deposits in Smyth county.

Newcastle-Woodworking Factory.—Mr. Faust, of Mahanoy City, Pa., will, it is stated, move his woodworking factory to Newcastle.

Newport News-Cotton Factory.—The erection of a cotton factory is projected. The Newport News Land & Development Co. can give information.

Newport News-Land.—The Newport News Land & Development Co., reported in last issue as organized, has been incorporated with a capital stock of \$100,000.

Norfolk-Land, &c.—The Norfolk & Lambert's Point Land Co., with E. C. Moormaw, of Buena Vista, as president, has been organized to purchase land, &c.

Norfolk-Improvements.—The city has been authorized to issue \$79,000 of bonds for improving the streets, for Gamewell fire-alarm telegraph, etc.

Norfolk-Water Works.—The water works committee recommends the purchase of a 10,000-gallon pump for the water works.

Norfolk-Cotton Factory.—D. Lowenburg, I. E. Campe, H. Nixdorf and others have incorporated the Norfolk Manufacturing Co. with a capital stock of not less than \$20,000 nor more than \$50,000, for the purpose of manufacturing cotton, woolen, silk goods, etc.

Norfolk-Land.—The South Norfolk Development Co. has been organized with J. W. Perry, president; P. L. Poindexter, vice president, and D. Lowenburg, secretary, to purchase and improve land, &c. The capital stock is \$300,000.

Prince Edward County-Granite Quarry.—H. V. Gray, J. M. Cunningham and others, of Roanoke, will probably develop a granite quarry.

Pulaski-Publishing.—A stock company is reported as organized with W. F. Nicholson, president, and J. E. Kabrich, secretary, for the purpose of publishing a paper to be called the Pulaski Advertiser.

Red Hill-Lead Mines.—R. D. & R. H. Anderson, F. Durrett and others have, as stated in last issue, organized a company and are developing lead mines.

Richmond-Electric Railway Signal.—The Waddell Railway Electric Signal Co. has been incorporated with S. H. Letcher, of Lexington, as president; O. O. Owens, vice president, and B. C. Wherry, secretary.

Richmond-Straw Hat Factory.—The Southern Straw Works has started the straw hat factory mentioned in last issue.

Roanoke-Land.—The Phoenix Land Co. has been incorporated with I. Bachrach, president; P. Adler, vice-president, and I. Sachs, secretary. The capital stock is to be not less than \$5,000 nor more than \$25,000.

Roanoke-Land.—The Union Land Co. has been incorporated with J. H. H. Figgat, of Fincastle, as president; T. W. Spindle, vice-president, and H. M. Darnell, secretary. The capital stock is to be not less than \$10,000 nor more than \$100,000.

Roanoke-Real Estate.—The Piedmont Investment Co. has been incorporated with H. L. Chiles, president, and A. E. King, secretary, for the purpose of dealing in real estate, etc. The capital stock is \$10,000.

Roanoke-Gas and Water Works.—The Roanoke Gas & Water Co. is reported as to increase capacity of its gas and water works.

Roanoke-Underwear Factory.—W. M. Chatham is reported as corresponding with a Richmond party with a view to move his \$25,000 underwear factory to Roanoke.

Sheridan-Sash, Door and Blind Factory.—A sash, door and blind factory is reported as being erected.

Stanley-James MacNider, of New York, is president; T. J. McSpiden, of Baltimore, Md., vice-president, and J. T. Hyde, of New York, secretary, of the Stanley Land & Furnace Co., recently reported.

Staunton-Nut Lock Factory.—The Humbert Nut Lock Co. was reported by an error under Basic City in last issue.

Vicar's Switch-Coal Mines.—Myers Bros are developing coal mines, as lately stated.

Vinton-Land, etc.—The Vinton Real Estate Co. has been incorporated with R. H. Woodrum, president; W. K. Andrews, vice president, and Wm. Lunsford, secretary, and others. The capital stock is to be not less than \$6,500 nor more than \$25,000.

Waynesboro-Real Estate, &c.—The Boston Developing Co. has been incorporated with F. A. Oaborn as president; W. H. Ward, vice president, and G. W. Fowle, Jr., secretary, to deal in real estate, &c. The capital stock is \$300,000.

Waynesboro-Sash Door and Blind Factory, &c.—W. H. Kelly and R. H. Richardson will, it is stated, start a planing mill and sash, door and blind factory.

Waynesboro-Land.—The West End Land Co. has changed its name to the Central Land Co.

#### WEST VIRGINIA.

Barnesville (P. O. at Fairmont) Coal Mines.—J. E. Watson, of Fairmont, has, it is stated, purchased the West Fairmont & Marion Consolidated Coal & Coke Co.'s coal property, consisting of 600 acres.

Charleston-Cycle Factory.—The Kanawha Bicycle Co., reported in last issue, has for president Jacob Jelenko, for vice-president Frank Woodman, and for secretary W. T. McClung.

Harper's Ferry.—J. W. Doll and T. S. Smith, of Washington, D. C., have purchased the Ratling Spring property near Harper's Ferry.

Morgantown-Coal Mines.—A stock company will probably be organized to develop coal mines near Morgantown and other places.

Moundsville-Wagon Factory.—The Bodley Wagon Works, of East Wheeling, is reported as to erect a wagon factory in Moundsville.

Shenandoah Junction-New Town.—It is stated that all the property at this point has been purchased by capitalists, who will build an industrial town.

Wellsburg-Brick and Tile Works.—Brick and tile works will, it is stated, be erected. George W. Freshwater can give information.

Wheeling-Oil and Gas Wells.—G. Ackerman, H. J. Arbens, J. Mills and others have organized the Gamble Oil & Gas Co. with a capital stock of \$4,000 for the purpose of sinking oil and gas wells.

Wheeling-Lantern Factory.—The stock company reported in last issue as organized to erect a lantern factory is to be known as the Wheeling Lamp & Stamping Co. Its factory will be four stories high, 6x11½ feet.

Wheeling-Bakery and Cracker Factory.—The Wheeling Baking Co. will, it is stated, erect the bakery and cracker factory previously mentioned.

Wheeling-Iron Roofing Works.—The Wheeling Corrugating Co. will enlarge its iron roofing works, as stated in last issue.

Wheeling—Tobacco Factory.—The West Virginia (Red Letter) Tobacco Co. has purchased the buildings of the Bodley Wagon Co., in East Wheeling, for about \$70,000, and will utilize them as a tobacco factory.

#### BURNED.

Austell, Ga.—The Austell chair factory. The loss is estimated at \$10,000.

Baird, Texas.—The cotton gin of J. M. Matthews.

Bee Caves, Texas.—The cotton gin of Carl Beck. The loss is estimated at \$3,000.

Berryville, Ala.—The saw mill of A. G. Parker & Co.

Chase City, Va.—The saw mill of Finch & Emory, near Chase City.

Cleburne, Texas.—The cotton gin of A. J. Burditt.

Lewisville, Texas.—The Long Prairie cotton gin.

Shreveport, La.—The saw mill of J. W. Jones.

Troy, Texas.—The cotton gin of A. H. Curtis. The loss is estimated at \$3,500.

Uniontown, Ky.—The whisky distillery of the Mutual Distilling Co., of Philadelphia, Pa.; loss about \$50,000.

## Building Notes.

Abingdon, Va.—A new hotel to cost \$50,000 is talked of.

Anniston, Ala.—The Alabama Mineral Railroad Co. (office, Anniston) is said to contemplate the erection of a shed at the union depot to cost \$15,000.

Asheville, N. C.—Dr. Hargan is reported as erecting a house to cost \$5,000; Frank Cox, a house to cost \$10,000, and W. E. Burkholder, a house to cost \$5,500.

Asheville, N. C.—R. T. Gill has prepared plans for the erection of a residence to cost \$10,000 for George Heck.

Athens, Tenn.—W. G. Williams, of Delaware, Ohio, is said to be contemplating the erection of a dormitory for the Grant University.

Augusta, Ga.—It is reported that H. Hardy will erect a residence to cost \$7,000; Mrs. R. E. Fleming, a residence to cost \$6,000, and Mrs. M. S. Watton, a residence to cost \$5,000.

Basic City, Va.—The Basic City Mining, Manufacturing & Land Co. will, it is reported, soon let contract for the erection of a three-story office building.

Biloxi, Texas.—The Biloxi Canning Co. intends erecting a new warehouse.

Birmingham, Ala.—The Athletic Club is said to be contemplating the erection of a new hall.

Buchanan, Va.—H. W. Felix is reported as erecting a four-story brick building.

Buena Vista, Va.—H. H. Myers will, it is reported, erect a store building to cost \$6,500; F. S. White, a residence to cost \$8,000, and F. Slohite, a residence to cost \$8,000.

Chattanooga, Tenn.—J. C. Albrecht and J. B. Neely will, it is reported, erect a two-story business block to cost \$10,000.

Chattanooga, Tenn.—It is reported that plans are being prepared for the erection of a \$60,000 residence for Lewis S. Colyar.

Corpus Christi, Texas.—Hotel.—E. H. Ropes is reported as erecting a new hotel.

Dallas, Texas.—Hotel.—G. F. Macon is reported as to build a \$50,000 hotel.

Dallas, Texas.—C. L. Shumate will, it is reported, erect a residence at Oak Cliff to cost \$7,000.

Dallas, Texas.—J. S. Moss will erect a residence to cost \$10,000; Henry Exall, an office building to cost \$60,000; Frank Irvin, an office building to cost \$25,000; J. E. Henderson, an office building to cost \$30,000.

Durham, N. C.—S. L. Leary has prepared plans for the erection of a school building to cost \$25,000, also a hospital to cost \$10,000.

Durham, N. C.—The Durham Consolidated Land & Improvement Co. is organized for the purpose among others of erecting a school building, a Y. M. C. A. building, hospital, etc.; capital stock \$1,000,000. J. S. Carr is president; A. B. Andrews, vice-president; John Yancey, general manager, and R. H. Wright, secretary and treasurer.

Front Royal, Va.—T. F. Schneider, of Washington, D. C., has prepared plans for the erection of a new three-story brick hotel 60x100 feet, and to cost \$20,000; also for a three-story store and office building 60x80 feet, to cost \$80,000. C. A. McAttee, of Front Royal, can give particulars.

Greensboro, N. C.—A new jail is talked of.

Greenwood, S. C.—The Greenwood Warehouse Co. has been chartered with a capital stock of \$4,500. J. A. Marshall, J. B. Sample and others are among the incorporators.

Harper's Ferry, W. Va.—Hotel.—The hotel reported in last issue will be erected by T. S. Smith, of Washington, D. C., and J. W. Doll.

Knoxville, Tenn.—Plans have been prepared by R. T. Gill for the erection of a residence to cost \$15,000 for M. L. Ross; also for a residence for F. C. Richmond to cost \$10,000, and for a residence for W. B. Sullins to cost \$6,000.

Little Rock, Ark.—Wood Tucker is reported as to erect a residence to cost \$10,000.

Louisville, Ky.—Work has been commenced on the engine-house previously reported as to be erected.

Luray, Va.—The Equity Loan & Building Association has been organized with J. C. Weaver, president; C. T. Holtzman, secretary, and T. J. Berrey, treasurer.

Lynchburg, Va.—The Roman Catholics will, it is reported, erect an asylum for colored orphans.

Lynchburg, Va.—The Chesapeake & Ohio Railway Co. (office, Richmond) and the Lynchburg & Durham Railroad Co. contemplate, it is said, the erection of a union depot.

Macon, Ga.—Carstarphen & Tillman are erecting a warehouse 135x35 feet.

Macon, Ga.—G. F. Rogers will, it is stated, erect a store to cost \$10,000; G. S. Jones & Co., a store to cost \$10,000; Thomas Bros., a warehouse to cost \$30,000; G. H. Plowman, a residence and stable to cost \$5,000; A. G. Wills, a residence to cost \$9,000; Bessard Bros., a business house to cost \$9,000.

Marshallville, Ga.—Hotel.—The Marshallville Manufacturing & Improvement Co. will, it is stated, erect a hotel.

Memphis, Tenn.—The Second Presbyterian congregation is contracting for the erection of the \$100,000 church lately reported.

Monroe, La.—W. E. Speer & Co. have secured contract for the U. S. courthouse and postoffice building lately mentioned.

Morganton, N. C.—The Richmond & Danville Railroad Co. (office, Richmond, Va.) is reported as to have let contract for the erection of a new depot.

Norfolk, Va.—The Norfolk & Lambert's Point Land Co. has been organized with B. C. Moomaw, of Buena Vista, president, for the purpose of buying lands and erecting houses.

Ormond, Fla.—McGuire & McDonald have, it is stated, secured contract for the erection of a new hotel to be built by J. D. Price.

Oxford, La.—The Oxford Male and Female College has been organized, and will, it is stated, erect a building. N. M. Smith, of Jackson, is president, and Thomas Steele, secretary.

Oxford, N. C.—The erection of another storage warehouse is talked of. W. A. Bullock can give information.

Palatka, Fla.—The erection of two school buildings is talked of.

Palmetto, Fla.—A branch of the Atlanta National Building & Loan Association has been organized with S. S. Lamb, president, and J. J. Wimbish, secretary and treasurer.

Port Allen, La.—A branch of the Interstate Building & Loan Association of Columbus, Ga., has been organized with O. M. Leblanc, president, and J. H. Herbert, secretary.

Quanah, Texas.—Hotel.—Rempe & Co., of Dallas, are reported to have secured contract for the erection of the new three-story hotel 54x110 feet, lately reported as to be built by the Quanah Hotel Co.

Raleigh, N. C.—It is reported that W. H. Pace will erect a residence to cost \$10,000.

Rockwall, Texas.—Hotel.—The organization of a stock company to erect a \$100,000 hotel is talked of.

Salisbury, Md.—Hotel.—Thomas M. Siemons has secured contract for the erection of a three-story hotel, 130x52 feet, for Birkhead & Carey; cost \$20,000. Electric lighting and bells will be used.

San Antonio, Texas.—The Alamo Baptist congregation will, it is reported, erect a church to cost \$16,000.

San Antonio, Texas.—The following parties are reported as to erect buildings: M. Kolff & Bro., a store to cost \$22,000; B. F. Geoklen, a residence to cost \$20,000; W. B. Wright, a residence to cost \$17,500; G. S. Thornton, a residence to cost \$15,000; J. M. Lowery, a residence to cost \$5,000; G. B. Buero, a store to cost \$13,000; A. & D. Appenheimer, a store to cost \$8,000; F. W. Mullaly, a residence to cost \$6,000.

San Antonio, Texas.—W. B. Wright will, it is stated, erect a hotel to cost \$50,000.

Shenandoah, Va.—Work has been commenced on the hotel previously reported as to be erected.

Shenandoah, Va.—Hotel.—The Jefferson Lumber & Manufacturing Co. has secured contract for furnishing framing and finished lumber, doors, sashes, etc., for the \$75,000 hotel previously reported as to be erected.

Suffolk, Va.—Hotel.—Henry Kirn is reported as to erect a brick block and hotel.

Sumter, S. C.—The Sumter City Railway & Freight Co. has been chartered with a capital stock of \$10,000. J. A. Wood, R. A. Brand and others are among the incorporators.

Sumter, S. C.—Work will, it is said, soon be commenced on the new roundhouse to be built

by the Charleston, Sumter & Northern Railroad Co.

Virginia Beach, Va.—Hotel.—The Norfolk & Virginia Beach Railroad Co. (office, Norfolk) will, it is stated, enlarge its hotel.

Waco, Texas.—It is reported that C. H. Higginson will erect a residence to cost \$9,000; B. Alexander, a residence to cost \$7,500; Weger Rosenthal, two stores to cost \$6,000; two stores for F. M. Pearlstone to cost \$17,000.

Waco, Texas.—Wm. Edmunds will, it is reported, erect a residence to cost \$8,000.

Washington, D. C.—Peter McCartney has secured contract for the erection of a colored high school at \$69,653.

Washington, D. C.—A. P. Clark, Jr., will erect 2 three-story dwellings, 23x50 feet, to cost \$17,000—steam heating will be used—also 4 two-story dwellings to cost \$16,000; E. S. Kennedy, 3 two-story brick dwellings to cost \$9,000; B. H. Warder will remodel his business building at a cost of \$10,000—steam heating, electric bells and elevators will be used; plans have been prepared by N. T. Haller for the erection of 3 three-story dwellings to cost \$18,000—electric bells and lighting will be used—also for the erection of 8 two-story dwellings to cost \$26,000; also for 3 brick three-story dwellings, 17x14 feet, to cost \$15,000, for W. R. Coon; by Pitney & Bradford for the erection of a three-story brick dwelling to have hot water heating and to cost \$11,000 for J. R. McG. Ash; by A. P. Clark, Jr., for the erection of 4 two-story brick dwellings to cost \$16,000, also for 2 two-story brick dwellings to cost \$17,000 for J. T. King; by C. A. Didden for a four-story store and dwelling, to be 20x95 feet and to cost \$7,000, for Frank Teuber; by B. S. Simmons for the reconstruction of office building and flats, to be 21x97 feet, four stories, and to cost \$9,000, for B. L. Walker—hot water heating and electric bells will be used; by C. E. Burden for 2 dwellings 20x44 feet, to have furnace heating and electric bells, for C. W. Handy.

## MOUNTAIN PASSES OF THE CUMBERLAND.

[By James Lane Allen, in Harper's Monthly.]

You may begin at the western frontier of Kentucky, on the Mississippi river, about five hundred miles away, and travel steadily eastward across the billowy plateau of the State, going up and up all the time until you come to its base, and above its base it rises to the height of some 3,000 feet. For miles before you reach it you discover that it is defended by a zone of almost inaccessible hills with steep slopes, forests difficult to penetrate, and narrow jagged gorges; and beyond these further defended by a single sharp wall-like ridge, having an elevation of about 2,200 feet, and lying nearly parallel with it, at a distance of about 20 miles. Or, if you should attempt to reach this wall from the South, you would discover that from that side also it is hardly less hostile to approach. Hence it has stood in its virgin wilderness, a vast isolating and isolated barrier, fierce, beautiful, storm-racked, serene; in winter, brown and gray with its naked woods and rifts of stone, or mantled in white; in summer, green, or of all greens from darkest to palest, and touched with all shades of bloom; in autumn, colored like the sunset clouds; curtained all the year by exquisite health-giving atmospheres, lifting itself all the year toward lovely, changing skies.

Understand clearly, if possible, the position of this natural fortress line with regard to the area of Kentucky. That area has somewhat the shape of an enormous flat foot, with a disjointed big toe, a roughly hacked-off ankle, and a missing heel. The sole of this huge foot rests solidly on Tennessee, the Ohio river trickles across the ankle and down over the top, the big toe is washed entirely off by the Tennessee river, and the long-missing heel is to be found in Virginia, never having been ceded by that State. Between the Kentucky foot and the Virginia heel is piled up this immense bony, grisly mass of the Cumberland Mountain, extending some 300 miles northeast and southwest.

But for the presence of this wall the history of the State, indeed the history of the United States, would have been profoundly different. Long ago, in virtue of its position, Kentucky would have knit together, instead of holding apart, the North and the South. The campaigns and

the results of the civil war would have been changed; the civil war might never have taken place. But standing as it has stood, it has left Kentucky, near the close of the first century of its existence as a State, with a reputation somewhat like the shape of its territory—unsymmetric, unutilized, and with certain parts missing.

But now consider this wall of the Cumberland mountain from another point of view. If you should stand on the crest at any point where it forms the boundary of Kentucky; or south, where it extends into Tennessee; or north, where it extends into Virginia—if you should stand thus and look northward, you would look out upon a vast area of coal. For many years now it has been known that the coal-measure rocks of eastern Kentucky comprise about a fourth of the area of the State, and are not exceeded in value by those of any other State. It has been known that this buried solar force exceeds that of Great Britain. Later it has become known that the Kentucky portion of the great Appalachian coal field contains the largest area of rich canal coals yet discovered, these having been traced in 16 counties, and some of them excelling by test the famous canal coal of Great Britain; later it has become known that here is to be found the largest area of coking coal yet discovered, the main coal—discovered a few years ago, and named the "Elkhorn"—having been traced over 1,600 square miles, and equaling American standard coke in excellence.

Further, looking northward, you look out upon a region of iron ores, the deposits in Kentucky ranking sixth in variety and extent among those to be found in all other States, and being better disposed for working than any, except those of Virginia, Tennessee and Alabama. For a hundred years now, it should be remembered in this connection, iron has been smelted in Kentucky, and been an important article of commerce. As early as 1823 it was made at Cumberland Gap, and shipped by river to markets as remote as New Orleans and St. Louis. At an early date also it was made in a small charcoal forge at Big Creek Gap, and was hauled in wagons into central Kentucky, where it found a ready market for such purposes as ploughshares and wagon tires.

Further, looking northward, you have extending far and wide before you the finest primeval region of hard woods in all America.

Suppose, now, that you turn and look from this same crest of the Cumberland mountain southward, or toward the Atlantic seaboard. In that direction there lie some 250,000 square miles of country which is practically coalless. But practically coalless, it is incalculably rich in all grades of iron ores for the manufacture of iron and steel. You look out upon the new industrial empire of the United States, with vast and ever-growing needs of manufactures, fuel and railroad. That is, for a 100 miles you stand on the dividing line of two distinct geological formations; to the north, the Appalachian coal fields; to the south, mountains of iron ores; rearing itself between these, this immense barrier wall, which creates an unapproachable wilderness not only in South eastern Kentucky, but in East Tennessee, Western Virginia and Western North Carolina—the largest extent of country in the United States remaining undeveloped.

On the Kentucky side of the mighty wall of the Cumberland mountain, and nearly parallel with it, is the sharp single wall of Pine mountain, the westernmost ridge of the Alleghany system. For a 100 miles these two gnarled and ancient monsters lie crouched side by side, guarding between them their hidden stronghold of treasure—an immense valley of timbers and irons and coals. Near the middle point of this inner wall there occurs a geological fault. The mountain falls apart as though cut in



twin by some heavy downward stroke, showing on the faces of the fissure precipitous sides wooded to the crests. There is thus formed the celebrated and magnificent pass through which the Cumberland river—one of the most beautiful in the land—slips silently out of its mountain valley, and passes on to the hills and the plateaus of Kentucky. In the gap there is a space for the bed of this river, and on each side of the river space for a roadway and nothing more.

Note the commanding situation of this inner pass. Travel east along Pine mountain or travel west, and you find no other water-gap within a 100 miles. Through this that thin toiling line of pioneer civilizers made its way, having scaled the great outer Cumberland wall some 15 miles southward. But for this single geological fault, by which a water-gap of the inner mountain was placed opposite a depression in the outer mountain, thus creating a continuous passway through both, the colonization of Kentucky, difficult enough even with this advantage, would have been indefinitely delayed, or from this side wholly impossible. Through this inner portal was traced in time the regular path of the pioneers, afterward known as the Wilderness road. On account of the travel over this road and the controlling nature of the site, there was long ago formed on the spot a little backwoods settlement, calling itself Pineville.

Middlesborough! For a good many years in England and throughout the world the name has stood associated with a certain idea of wealth and commercial greatness—the idea of a powerful city near the mouth of the Tees, in the North Riding of Yorkshire, which has become the principal seat of the English iron trade.

But there is now an English Middlesborough in America, which is already giving to the name another significance in the stock market of London and among the financial journals of the realms, and if the idea of its founders is ever realized, if its present rate of development goes on, it will in time represent as much wealth in gold and iron as the older city.

In the mere idea of the American or Kentucky Middlesborough—for while it seems to be meant for America, it is to be found in Kentucky—there is something to arrest attention on the score of originality. That the attention of wealthy commoners, bankers, scientists and iron masters in Great Britain—some of them men long engaged in copper, tin and gold mines in the remotest quarters of the globe—that the attention of such men should be focussed on a certain spot in the backwoods of Kentucky; that they should repeatedly send over experts to report on the combination of mineral and timber wealth; that on the basis of the reports they should form themselves into a company called "The American Association, Limited," and purchase 60,000 acres of land lying on each side of the Cumberland mountain and around the meeting point of the States of Virginia, Tennessee and Kentucky; that an allied association called "The Middlesborough Town Co." should place here the site of a city, with the idea of making it the principal seat of the iron and steel manufacture of the United States; that they should go to work to create this city outright by pouring in capital for every needed purpose; that they should remove gigantic obstacles in order to connect it with the national highways of commerce; that they should thus expend some \$20,000,000, and let it be known all millions further wanted are forthcoming—in the idea of all this there is enough to make one pause.

It is too late to enter upon any argument for the wealth that is tributary to Middlesborough. In the mountains around Cumberland Gap it is estimated that there is enough coal to furnish annually 4,000,000 tons for a hundred years. It is too late

even to set down on paper all the concerns, all the industrial enterprises that have been taken thither, or that have been developed on the spot. It has grown too rapidly. Less than a year ago there were three buildings and a population of 25; there are now over 6,000 people, with their electric lights and street cars, and seven churches, and eight hotels, and banks, and telegraphs, and telephones, and what not, with the promise of club and opera-houses, a rink, a public library, a union depot and an exhibition hall; and for further information a still unsatisfied reader may get his fill from other sources.

Suppose now that you stand beyond the great wall of the Cumberland Mountain at Cumberland Gap. You have come through the splendid tunnel beneath, or you have crawled over the summit in the ancient way, but you stand at the base on the Tennessee side in the celebrated Powell's River Valley.

Turn to the left and follow up this valley, keeping the mountain on your left. You are not the first to take this course; the line of human ants used to creep down it in order to climb over the wall at the gap. Mark how inaccessible this wall is at every other point. Mark also that as you go two little black parallel iron threads follow you—a railroad, one of the greatest systems of the South. All along the mountain slope overhanging the railroad, iron ore; beyond the mountain crest, timbers and coals. Observe likewise the features of the land: water abundant, clear and cold; fields heavy with corn and oats; an ever-changing panorama of beautiful pictures. The further you go, the more rich and prosperous the land, the kinder the soil to grains and gardens and orchards; bearing its burden of timbers—walnut, chestnut, oak and mighty beeches; lifting to the eye in the near distance cultivated hill-sides and fat meadows; stretching away into green and shadowy valley glades; tuneless with swift crystal streams—a land of lovely views.

Remember well this valley, lying along the base of the mountain wall. It has long been known as the granary of Southwest Virginia and East Tennessee; but in time, in the development of civilization throughout the Appalachian region, it is destined to become the seat of a dense pastoral population, supplying the dense industrial population of new mining and manufacturing towns with milk, butter, eggs and fruit and vegetables. But for the contiguity of such agricultural districts to the centers of ores and coals, it would perhaps be impossible to establish in these remote spots the cities necessary to develop and transport their wealth.

Follow this valley up for a distance of sixty miles from Cumberland Gap and there pause, for you come to the head of the valley, and you have reached another pass in the mountain wall. You have passed out of Tennessee into Virginia, a short distance from the Kentucky border, and the mountain wall is no longer called the Cumberland: twenty miles southwest of where you now are that mountain divided, sending forth this Southern prong, called Stone Mountain, and sending the rest of itself between the State line of Kentucky and Virginia, under the name of the Big Black Mountain. Understand also the general bearings of the spot at which you have arrived. It is in that same Alleghany system of mountains—the richest metalliferous region in the world—the northern section of which long ago made Pittsburgh; the southern section of which has since created Birmingham, and the middle section of which, where you now are, is claimed by expert testimony, covering a long period of years and coming from different and wholly uninterested authorities, to be the richest of the three.

Understand further that you have

come to a third mountain pass—Pineville being the first and Middlesborough the second—where the same vast wilderness of ores and timbers and coals is being attacked, penetrated and developed; where the problem of the cheapest manufacture of iron and steel is being worked at with tremendous energy; where the new South is struggling for the industrial supremacy of the nation as no section ever struggled before.

At a certain point of this continuation of Cumberland Mountain, called Stone Mountain, the main fork of Powell's river has in the course of ages worn itself away down to a practical railroad pass at water-level, thus opening connection between the coking coal on the north and the iron ores on the south of the mountain. Pause for a single moment at this mountain gorge. No pass that I have ever seen—except those made by the Doe river in the Cranberry region of North Carolina—has its wild, enrapturing loveliness; towering above on each side are the mountain walls, ancient and gray and rudely disordered; at every coign of vantage in these, grasping their precipitous buttresses as the claw of a great eagle might grasp the uttermost brow of a cliff, enormous trees above trees, and amid all the trees a green lace-work of undergrowth. Below, in a narrow winding channel piled high here and there with boulders, with jutting rocks and sluice like fissures—below and against all these the river hurls itself, foaming, roaring, whirling, a long cascade of white or lucent water. This is Big Stone Gap, and the valley into which the river pours its full strong current is the site of the city. A lofty valley it is, having an elevation of 1,600 feet above the sea, with mountains girdling it that rise to the height of 4,000—a valley the surface of which gently rolls and slopes toward these encircling bases with constant relief to the eye—a valley spacious enough, with those opening into it, to hold a city of the population of New York.

This mountain pass, lying in the heart of this reserved wilderness of timbers, coals and ores, has always had its slender thread of local history. It was from a time immemorial a buffalo and Indian trail, leading to the head waters of the Cumberland and Kentucky rivers; during the civil war it played its part in certain military exploits and personal adventures of a quixotic flavor; and of old the rich farmers of Lee county used to drive their cattle through it to fatten them on the pea-vine and bluegrass growing thick on the neighboring mountain tops. But in the last 25 years—that quarter of a century which has developed in the United States an ever-growing need of iron and steel, of hard-woods, and of all varieties of coal; a period which has seen one after another of the reserve timber regions of the country thinned and exhausted—during the past 25 years attention has been turned more and more toward the forests and the coal fields in the region occupied by the South Alleghany Mountain system, and especially fixed upon the wealth of resources that are tributary to this spot.

But simply a general knowledge of this wealth was not enough to determine Big Stone Gap as the site of a manufacturing city; and here one comes upon an idea that deserves momentary thought. It may be said that a large part of the South is passing through a period of industrial town-making, largely due to the discovery that it is incalculably rich in various grades of iron ore, and to the growing demand for woodworking industries.

The legislature of Kentucky has just passed an act incorporating the Interstate Tunnel Railroad Co., and empowering it to build an interstate double-track highway from the head waters of the Cumberland and Kentucky rivers to Big Stone Gap, tunneling both the Black and Cum-

berland mountains, and affording a pass-way north and south for the several railways of Eastern Kentucky already heading toward this point. The plan embraces two double-track toll tunnels, with double-track approaches between and on each side of the tunnel, to be owned and controlled by a stock company which shall allow all railroads to pass on the payment of toll. When this unparalleled enterprise, involving the cost of over \$2,000,000—all but a trifle of which has been secured—when this enterprise is carried out, the railroad problem at Big Stone Gap, and with it the problem of developing all the mineral wealth of Southwest Virginia and Southeast Kentucky will be practically solved.

Suppose once more that you stand outside the Cumberland or Stone mountain at the gap. Now turn and follow down the beautiful Powell's valley, retracing your course to Cumberland Gap. Pass this, continuing down the same valley and keeping on your right the same parallel mountain wall. Mark once more how inaccessible it is at every point. Mark once more the rich land and prosperous tillage. Having gone about 30 miles, pause again. You have come to another pass, another remarkable gateway. You have traveled out of Kentucky into Tennessee, and the Cumberland mountain has changed its name and become Walden's mountain, distant some 15 miles from the Kentucky State line.

It is necessary once more to define topographical bearings. Running northeast and southwest is this Cumberland mountain, having an elevation of from 2,500 to 3,000 feet. Almost parallel with it, from 10 to 20 miles away, and having an elevation of about 2,000 feet, lies Pine mountain, in Kentucky. In the outer or Cumberland mountain it has now been seen that there are three remarkable gaps: Big Stone Gap on the east, where Powell's river cuts through Stone mountain; Cumberland Gap intermediate, which is not a water gap, but a depression in the mountain; and Big Creek Gap in the west, where Big creek cuts through Walden's mountain, the last being about 40 miles distant from the second, about 90 from the first. Now, observe that in Pine mountain that there are three water gaps having a striking relation to the gaps in the Cumberland—that is, behind Cumberland Gap is the pass at Pineville; behind Big Stone Gap and beyond it at the end of the mountain are the Breaks of Sandy, and behind Big Creek Gap are the Narrows, a natural water gap connecting Tennessee with Kentucky.

But it has been seen that the English have had to tunnel Cumberland mountain at Middlesborough in order to open the valley between Pine and Cumberland mountains to railroad connections with the South. It has also been seen that at Big Stone Gap it has been found necessary to construct a vast tunnel under Big Black mountain and also under Pine mountain in order to establish north and south connections for railroads and control the development of Southeast Kentucky and Southwest Virginia. But now mark the advantage of the situation at Big Creek Gap—a water gap at railroad level giving entrance from the south, and 17 miles distant a corresponding water gap at railroad level giving exit from the south and entrance from the north. There is thus afforded a double natural gateway at this point, and at this point alone—an inestimable advantage. Here, then, is discovered a third distinct center in Cumberland mountain where the new industrial civilization of the South is at work. All the general conditions elsewhere stated are here found present—timbers, coals and ores, limestone, granite, water, scenery, climate, flora; the beauty is the same, the wealth not less.

With a view to development, a company has bought up and owns in fee 30,000 acres of coal lands and some 7,000 of iron ore in

the valley and along the foot-hills on the southern slope of the mountain. They have selected and platted as a town site over 1,600 acres of beautiful valley land, lying on both sides of Big creek where it cuts through the mountain, 1,200 feet above the sea level. But here again one comes upon the process of town-making at a still earlier stage of development. That is, the town exists only on paper, and improvement has not yet begun. Taken now, it is in the state that Middlesborough was once in before a railroad reached it, or Big Stone Gap at its inception. So that it should not be thought any the less real because it is rudimentary or embryonic. A glance at the wealth tributary to this point will soon dispel all doubt that here, as at the other strategic mountain passes of the Cumberland, is to be established an important town.

Only consider that the entire 20,000 acres owned by the Big Creek Gap Co. are underlain by coal, and that the high mountains between the Pine and Cumberland contain vertical sections of greater thickness of coal-measure rocks than are to be found anywhere else in the vast Appalachian field; that Walnut mountain, on the land of the company—the western continuation of the Black mountain and the Log mountain of Kentucky—is 3,300 feet above sea, and has 2,000 feet of coal measures above drainage; and that already there has been developed the existence of six coals of workable thickness above drainage level, five of them underlying the entire 20,000 acres, except where small portions have been cut away by the streams.

The lowest coal above drainage—the Sharpe—presents an outcrop about twenty feet above the bed of the stream, and underlies the entire purchase. It has long been celebrated for domestic use in the locality. An entry driven in about sixty feet shows a twelve-inch cannel coal with a five-inch soft shale, burning with a brilliant flame, and much used in Powell's valley; also a bituminous coal of 43-inch thickness, having a firm roof, cheaply minable, and yielding a coke of over 93 per cent. pure carbon.

The next coal above is a cannel coal having an outcrop on the middle fork of Big creek of thirty-six inches, and on the north slope of the mountains, six miles off, of thirty-eight inches, showing a persistent bed throughout.

Above this is the Douglass coal, an entry of forty feet into which shows a thickness of fifty inches, with a good roof, and on the northern slope of the mountains, at Cumberland river, a thickness of sixty inches. This is a gas coal of great excellence, yielding also a coke, good, but high in sulphur. Above the Douglass is an unexplored section of great thickness, showing coal stains and coals exposed, but undeveloped.

The uppermost coal discovered and the highest opened in Tennessee, the Walnut mountain coal, is a coking variety of superior quality, 58 inches thick, and, though lying near the top of the mountain, protected by a sandstone roof. It is minable at a low cost, admirable for gas, and is here found underlying some 2,000 acres.

As to the wealth of iron ores, it has been said that the company owns about 7,000 acres in the valley and along the southern slopes of Cumberland mountain. There is a continuous outcrop of the soft red fossiliferous, or Clinton, iron ore, ten miles long, nowhere at various outcrops less than sixty inches thick, of exceptional richness and purity, well located for cheap mining, and adjacent to the coal beds. Indeed, where it crosses Big creek at the gap, it is only a mile from the coking coal. Lying from one to two hundred feet above the drainage level of the valley, where a railroad is to be constructed, and parallel to this road at a distance of a few hundred feet, this ore can be put on cars and delivered to the fur-

naces of Big Creek Gap at an estimated cost of a dollar a ton. Of red ore two beds are known to be present.

Parallel and near to the red fossiliferous, there has been developed along the base of Cumberland mountain a superior brown ore, the limonite—the same as that used in the Low Moor, Longdale and other furnaces of the Clifton Forge district. This, the Oriskany, has been traced to within ten miles of the company's lands, and there is every reason to believe that it will be developed on them. At the beginning of this article it was stated that iron of superior quality was formerly made at Big Creek Gap, and found a ready market throughout Central Kentucky.

Parallel with the ore and easily quarriable is the subcarboniferous limestone, one thick stratum of which contains 98 per cent. of carbonate of lime; so that, with liberal allowance for the cost of crude material, interest, wear and tear, it is estimated that iron can here be made at as low a cost as anywhere in the United States, and that furnaces will have an advantage in freight in reaching the markets of the Ohio valley and the farther South. Moreover, the various timbers of this region attain a perfection seldom equalled, and by a little clearing out of the stream logs can be floated at flood tides to the Clinch and Tennessee rivers. To-day mills are shipping these timbers all the way from Boston to the Rocky mountains.

Situated in one of the most beautiful of valleys, 1,200 feet above sea level, surrounded by park-like forests and fertile valley lands, having an abundance of purest water and perfect drainage, with iron ore only a mile from coke, and a double water gap giving easy passage for railroads, Big Creek Gap develops peculiar strength and possibilities of importance, when its relation is shown to those cities which will be its natural markets, and to the systems of railroads of which it will be the inevitable outlet. Within twenty miles of it lie three of the greatest railroad systems of the South. It is but thirty-eight miles from Knoxville, and the eight miles of low-grade road through a fertile blue-grass valley, peopled with intelligent, prosperous farmers, will put it in connection with magnetic and specular ores for the making of steel, or with the mountain of Bessemer ore at Cranberry. Its coke is about 300 miles nearer to the Sheffield and Decatur furnaces than the Pocahontas coke, which is now being shipped to them. It is nearer St. Louis and Chicago than their present sources of supply. It is the nearest point to the great coaling station for steamships now building at Brunswick, and it is one of the nearest bases of supply for Pensacola, which in turn is the nearest port of supply for Central and South America.

No element of wealth or advantage of position seems lacking to make this place one of the controlling points of that vast commercial movement which is binding the North and the South together, and changing the relation of Kentucky to both, by making it the great highway of railway connection, the fresh center of manufacture and distribution, and the lasting fountain-head of mineral supply.

I have thus wished to call attention to that line of towns which are springing up in the mountain passes of the Cumberland, and are making the backwoods of Kentucky the forefront of a new civilization. Through these three passes in the outer wall, and through that pass at Pineville in the inner wall behind Cumberland Gap—through these four it is believed that there must stream the railroads carrying to the South its timbers and coals; to the North its timbers, coal and iron; and carrying to both from these towns, as independent centers of manufacture, all those products, the crude materials of which exist in economic combination on the spot.

It is idle to say that all these places cannot become important. The competition will

be keen, and the fittest will survive; but all these are fit to survive, each having advantages of its own. Big Stone Gap lies so much nearer the East and the Atlantic seaboard; Big Creek Gap so much nearer the West and the Ohio and Mississippi valleys and the Lakes; Cumberland Gap and Pineville so much nearer an intermediate region.

## MACHINERY WANTED.

**If you desire to purchase machinery of any kind consult our advertising columns, and if you cannot find just what you wish, send us particulars as to the kind of machinery needed. We will make your wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. You will thus get all information desired as to prices, etc.**

Aqua Ammonia Machinery.—The Capital City Ice Co., Montgomery, Ala., wants to correspond with manufacturers of machinery for making aqua ammonia.

Belting.—W. C. Damron, Covington, Va., wants belting, pulleys, &c.

Boiler.—L. W. Hughes, Parkersburg, W. Va., will receive bids until September 23d for boiler for the pumping station of the water works.

Boiler.—The Marion Iron Works, Marion, S. C., want a 100 horse-power tubular boiler.

Boiler.—The Greenbrier Dress Meat Co., Roncove, W. Va., wants a second-hand 50 horse-power tubular boiler.

Boiler and Engine.—W. C. Damron, Covington, Va., wants a 30 horse-power boiler and engine.

Boiler and Engine.—The Mobile Phosphate & Chemical Manufacturing Co., Mobile, Ala., wants prices on a 1 to 125 horse power Corliss engine, with boiler.

Boiler and Engine.—A. R. Hamilton, Berkeley, Va., will probably want 80 horse-power boiler and 40 horse-power engine.

Boilers and Engines.—The West Virginia Tobacco Co., Wheeling, W. Va., will put in new boilers and engines.

Cars and Cables. Myers Bros., Vicar's Switch, Va., want mine cars and cables.

Cigar Machinery.—Warnock & Miller, Americus, Ga., will purchase cigar machinery and cigar box materials.

Coal-mining Machinery.—The Albertville Land & Improvement Co., Albertville, Ala., will probably soon want coal mining machinery.

Cotton Machinery.—The Albertville Land & Improvement Co., Albertville, Ala., will probably soon want machinery for a cotton factory.

Crusher.—Stevens & Scanlan, Middlesborough, Ky., want a rock crusher.

Crushers, &c.—The Mobile Phosphate & Chemical Manufacturing Co., Mobile, Ala., wants prices on crushers, mills, &c.

Crushing Machinery.—The Ocala & Blue River Phosphate Co., Ocala, Fla., will soon need machinery for crushing phosphate rock.

Derricks.—R. M. Chafer, Pikeville, Tenn., wants derricks for stone quarry.

Dry-kiln.—The Ocala & Blue River Phosphate Co., Ocala, Fla., will need a dry-kiln.

Elevators.—The American Tobacco Co., Durham, N. C., will want elevators for tobacco warehouse.

Engine.—The city of Gainesville, Ga., will soon purchase an engine to run electric-light plant.

Engines.—J. O. Wynn, secretary Farmers' Alliance, 25 W. Hunter street, Atlanta, Ga., wants prices on steam engines.

Engines.—The Murphy Wagon Manufacturing Co., Dadeville, Ala., wants engines.

Grinding Machinery.—H. P. Jones, Hillsboro, N. C., wants information about machinery for grinding ochre.

Hardware.—W. C. Damron, Covington, Va., wants builders' hardware.

Harrows, &c.—J. O. Wynn, secretary Farmers' Alliance, Atlanta, Ga., wants prices on cutaway harrows, corn shellers, reversible turning plows, mowers and reapers.

Hoisting Engines.—Myers Bros., Vicar's Switch, Va., will need two hoisting engines.

Hoop Machinery.—A. R. Hamilton, Berkeley, Va., will probably want hoop machinery.

Ice Machine.—Henry Bayer & Son want to purchase a 25 or 40 ton ice machine, second-hand.

Insulator Pins.—Hall & Buchanan, Sylva, N. C., want machinery for making insulator pins.

Kaolin Machinery.—T. B. Lumpkin, Buena Vista, Ga., wants information about machinery to separate sand from kaolin.

Knife Grinder.—W. C. Damron, Covington, Va., wants an automatic knife grinder.

Lath Machine.—Wheeler Bros., Crab Orchard, Tenn., want a lath machine.

Locomotive.—The Etowah Iron Co., Cartersville, Ga., wants a 30 inch gauge, new or second-hand locomotive, to weigh from 5 to 8 tons, to be used on 16 lb. rails.

Machinery.—The Georgia Southern & Florida Railroad Co., Macon, Ga., will need equipment for a machine shop to accommodate 1,000 miles of railroad.

Metal Dies, &c.—The Southern Straw Works, Richmond, Va., will need metal dies and plaster blocks for its straw hat factory.

Nails.—W. C. Damron, Covington, Va., wants a car-load of nails.

Prospecting Machinery.—Myers Bros., Vicar's Switch, Va., want coal prospecting machinery.

Pulleys, &c.—The Mobile Phosphate & Chemical Manufacturing Co., Mobile, Ala., wants prices on pulleys and conveyors.

Pump.—The Norfolk City Water Works, Norfolk, Va., will purchase a 10,000-gallon pump.

Pumping Engines.—Myers Bros., Vicar's Switch, Va., need pumping engines.

Quarrying Machinery.—R. M. Chafer, Pikeville, Tenn., wants machinery for quarrying and dressing stone.

Quarrying Machinery.—The Western North Carolina Iron & Stone Mining Co., Marion, N. C., will soon want stone quarrying machinery.

Rails.—The Sunny South Lumber Co., New Lewisville, Ark., wants good second-hand iron or steel 20 or 25 lb. T rails.

Rails.—The Lookout Mountain Incline Railway Co., Chattanooga, Tenn., will purchase 1½ miles of second-hand steel or iron rails weighing from 34 to 56 pounds per yard. Address H. F. Temple, vice president and general manager.

Roofing.—The American Tobacco Co., Durham, N. C., will want roofing, &c., for tobacco warehouse.

Roofing.—W. C. Damron, Covington, Va., wants metal roofing.

Saws.—W. C. Damron, Covington, Va., wants a swing cut-off saw, car cut-off saw and a self feed cut-off saw, &c.

Stand-pipe.—The Norfolk City Water Works, Norfolk, Va., will require a new stand-pipe.

Steam Launch.—J. W. Doll, Harper's Ferry, W. Va., wants a steam launch or tug drawing not more than four feet of water.

Steel Rails.—Myers Bros., Vicar's Switch, Va., want three miles of steel rails.

Straw-hat Sewing Machines, &c.—The Southern Straw Works, Richmond, Va., will soon buy straw-hat sewing machines, curling machines, &c.

Street Railroad.—The Rock Hill Land & Town Site Co., Rock Hill, S. C., wants prices and information on different systems of street railroads.

Telegraph Pins.—J. L. Morgan, Marion, N. C., wants machinery for making telegraph pins.

Veneer Machine.—A. R. Hamilton, Berkeley, Va., will probably want veneer machine.

Wagon Machinery.—The Murphy Wagon Manufacturing Co., Dadeville, Ala., wants machinery for a wagon factory.

Washboard Machinery.—A. L. Kirkman, Greensboro, N. C., wants prices on machinery to manufacture washboards.

Wheelbarrows, &c.—The Ocala & Blue River Phosphate Co., Ocala, Fla., wants car-load wheelbarrows, picks, shovels, &c.

Wire and Picket Fence Machinery.—G. L. Colgate & Co., Bedford City, Va., want wire and picket fence machinery.

Woodworking Machinery.—W. C. Damron, Covington, Va., wants a planer and matcher, tenoner, mortiser, &c.

## Half-Fare Home-Seekers' Excursion South.

Those contemplating a trip to the New South for pleasure or in quest of new fields of labor, should not fail to write to or call on any agent of the Queen & Crescent Route. This line will on September 9 and 23, and October 14, sell round-trip tickets to points in Tennessee, Georgia, Alabama, Mississippi, Louisiana, Florida, Arkansas and Texas, at one fare for the round trip. Tickets good 30 days for return. Four express trains leave Grand Central Depot, Cincinnati, daily, with through sleeping cars for Harrison, Cardiff, Rockwood, Chattanooga, Atlanta, Birmingham, Meridian, New Orleans and Jacksonville, Florida, making connection with through sleeper, Chattanooga to Jackson and Vicksburg, Miss. This is your opportunity to visit the booming South. The fall is the time to see it. September and October are pleasant months to travel. Be sure and ask for rates and tickets via Queen & Crescent Route, or address D. G. Edwards, G. P. & T. A., Cincinnati, O. †



# Hercules Ice Machines

FOR

Ice Making, Cold Storage, Packing Houses, Breweries, &amp;c.

Send for our new illustrated circular.

Hercules Iron Works, - - - Chicago, Ill.

## DO YOU USE ICE

Machinery; if so, note what J. D. Colby, of Swift & Co. stock-yards, Chicago, says of **BONNELL'S NUBIAN IRON ENAMEL:** "It is the only paint we will use for ice machinery." This after trying everything on the market. We also make the best agricultural, hollowware, &c.—in short, all kinds of black on the market. If you use asphaltum or anything similar it will pay you to write us. We guarantee everything we make, or refund freight and all other costs which a trial has cost you. How does that strike you?

**THE NUBIAN IRON ENAMEL CO.**  
103 Sangamon Street, CHICAGO. 77 Warren Street, NEW YORK.

**THE FRED. W. WOLF COMPANY,**  
Sole American Manufacturers of  
**The Linde Ice & Refrigerating Machinery.**

FACTORY: 302 to 330 HATHORN AVE., CHICAGO, ILL.  
OFFICES: 556 to 566 N. HALSTED ST.

Brewery Work and Cold Storage our Specialty. Plans and Estimates Promptly Furnished.

## RAEDER, COFFIN & CROCKER, ARCHITECTS

Rooms 916-919, 218 LaSalle Street, Chicago,  
Special Designers of Industrial Plants.  
Completely Equipped Shops, Foundries, Warehouses. Cotton and Woolen Mills, Grain Elevators, &c.  
HENRY RAEDER, Architect; A. S. COFFIN, B. S. CROCKER, Engineers.

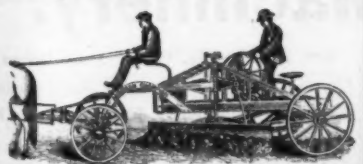
**C. R. MAKEPEACE & CO.**  
ARCHITECTS and Mill ENGINEERS  
PROVIDENCE, R. I. Plans, Specifications and Estimates furnished for Cotton and Woolen Mills.

**THE BROUGHTON MIXER**  
FOR  
Wall Plaster and Fertilizers.  
MANUFACTURED BY  
**W. D. DUNNING,**  
96 W. Water St., Syracuse, N. Y.  
SEND FOR CIRCULAR.

**The BOOMER & BOSCHERT**  
KNUCKLE JOINT  
**PRESS**  
FOR BALING  
Cloth, Paper, Yarn, &c.  
Or for any other purpose requiring great pressure.  
**BOOMER & BOSCHERT PRESS CO.**  
329 W. Water St. Syracuse, N. Y.

**DREW, BALDWIN & CO.**  
COTTON MILL  
Architects and Engineers,  
45 Broadway, New York.

Money Saved in Street Grading



**The Southern Equipment Co.**  
CHATTANOOGA, TENN.

**LOCKWOOD, GREENE & CO.**  
Mill Architects and Engineers,  
131 Devonshire Street, Boston, Mass.

SPECIALTY:  
Plans, Specifications and Superintendence for the Construction, Equipment and Organization of Cotton, Woolen, Worsted and other Textile Mills.

**GRAY & FITCH,**  
MILL ARCHITECTS & ENGINEERS,  
264 Essex Street, Lawrence, Mass.  
Plans executed for the best modern mill construction. Especial attention given to arrangements of power plants, shafting, etc.

**Nier, Hartford & Mitchell,**  
ENGINEERS.  
Water Works, Sewerage, Electrical Works and Municipal Improvements.  
Richardson Block, CHATTANOOGA, TENN.

KNOXVILLE, TENN.  
Room 10, City Hall. P. O. Box 21.  
**WRIGHT & WOOD,**  
Civil & Sanitary Engineers.  
Sewerage, Drainage, Water Supply, Municipal Work, Surveys, Estimates, Specifications, Superintendence. J. C. WRIGHT, C. E.  
C. F. WOOD, Jun. Am. Soc. C. E., Engineer and Superintendent Knoxville Water Co.

### CAR PILE DRIVERS

Extension truss, to drive from one bent to another. 20 feet take at swing, 9 feet from center. Fitted up with our new style Nanyth Steam Pile Hammer.  
**VULCAN IRON WORKS, CHICAGO.**



### WANTS.

**WANTED.**—An experienced practical saw mill man to take interest in the business and operate mill in South Georgia. Address Lumber, Lock Box 370, Atlanta, Ga.

**WANTED.**—A MAN WITH SMALL CAPITAL to go into the LAUNDRY BUSINESS in some live Southern town. A good opportunity for a live man. Address "PROFIT," care Manufacturers' Record, Baltimore, Md.

**WANTED.**—By Master Mechanic, charge of Machinery, Locomotives, Boilers and Repair Shops, in Blast Furnace, Mill or Forge. Experienced, competent and strictly sober. English and American references. Address "MECHANIC," 116 Wood Street, Chelsea Hill, Richmond, Va.

**WANTED.** Bids will be received until 12 o'clock M., October 1st, for building an Iron Girder Bridge over Canal in Middleborough, Bell County, Ky., one hundred feet wide and sixty-five feet long, sixty feet roadway and two twenty feet sidewalks. Plans and specifications can be seen at office of B. L. Loyd, City Engineer, Middleborough, Ky. D. N. MASON, Chairman City Finances.

Edwin F. Partridge, Prest.; Jos. W. Hawley V.-Prest.; H. Bayard Hodge, Sec.; Wm. S. Perot, Jr., Treas.; Jos. S. Keen, Jr., General Manager.

**The AMERICAN PIPE MFG. CO.**  
Phipps' Hydraulic Pipe a Specialty.  
Engineers & Contractors for Water Works.  
Solicit correspondence from town wishing to build upon franchise plan. Factory, Germantown Junction; Office, Room 24, 1325 Chestnut St., Phila.

**STEIN & SCHWARZ,**  
Complete Blast Furnace Plant.  
Acid or Basic Bessemer and Open Hearth Steel Works.  
Plans, Specifications, Estimates and Superintendence of Construction.  
Technical Reports on Machinery and Manufacturing Processes.  
323 Walnut Street, Philadelphia, Pa.

**OTTEN & WESTENHOFF,**  
Analytical & Consulting Chemists.  
Chemical Analysis of Iron Ore, Pig Iron, Steel, Limestone, Coal, Mineral Waters, Fertilizers, &c. Physical Tests of Iron, Steel and other Building Materials and Lubricating and Illuminating Oils, etc. Examination of Mining Properties.  
Office and Laboratory, 17 W. Third St., Cincinnati, O.

**J. H. PRATT,**  
ANALYTICAL CHEMIST & MINING ENGINEER  
1826 Third Avenue, Birmingham, Ala.  
Chemical Investigations, Analyses of Ores, Slags, Coals, Waters, &c. Reports on Mineral Properties, &c. Correspondence solicited.

**RATTLE & NYE,**  
Analytical Chemists,  
METALLURGISTS,  
AND  
Mining Engineers,  
CLEVELAND, O.

**A VIRGINIA STOCK FARM FOR SALE PRIVATELY.**—A valuable and beautiful newly improved Home, Grass and Stock Farm in Southwest Virginia, near New London Academy and Bedford Iron Springs, and in the MINERAL and "BOOMING" SECTION and a refined neighborhood, convenient to railroad, churches, &c. TITLE PERFECT; terms liberal. For particulars address the undersigned owner.  
G. W. TERRELL, Bedford Springs, Va.  
I also own large Cotton and Timber Plantations in Mississippi for sale.

**Textile Machinery**  
FOR SALE.  
Picking, Carding, Roving, Spinning, Spooling, Twisting, Reeling, Winding, Weaving and Finishing for Cotton and Woolen Mills. Very large stock to select from in our storehouses here, of over two acres of floorage.

**JEREMIAH CLARK,**  
Lowell, Mass. Office, 63 Dutton St.

**ICE PLANT**  
FOR SALE.  
Bought new last season, and now in successful operation. For particulars address

**ATER & WILKINS,**  
Water Valley, Miss.

**FOR SALE.**  
HALF INTEREST IN A  
**Brass and Bronze Foundry.**

A BARGAIN for the right man. Easy terms, good reason for wanting to sell. Address  
P. O. BOX 96, BIRMINGHAM, ALA.

**FOR SALE CHEAP.**  
Second-Hand

**HAZLETON TRIPOD BOILERS**  
of 300 horse-power each. Address  
SWIFT & CO., Station A, Kansas City, Mo.

### PROPOSALS.

**DEPARTMENT OF THE INTERIOR.**  
WASHINGTON, D. C., August 27, 1890.  
SEALED PROPOSALS will be received at this Department until 1 o'clock P. M., Wednesday, September 24th, 1890, for furnishing and delivering at the Government Hospital for the Insane of six (6) horizontal tubular boilers. Blank forms of proposal, specifications and instructions to bidders will be furnished on application to this Department. JOHN W. NOBLE, Secretary.

SEALED PROPOSALS will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M., on the 17th day of September, 1890, for all the labor and materials required to put in place complete the plumbing and drainage of the U. S. Customhouse, &c., building at Galveston, Texas, in accordance with the drawings and specification, copies of which may be had on application at this office or the office of the Superintendent. Each bid must be accompanied by a certified check for \$100.00. The Department will reject all bids received after the time herein stated for the opening of the same; also bids which do not comply strictly with all the requirements of this invitation. Proposals must be enclosed in an envelope, sealed and marked "Proposal for Plumbing, &c., for the U. S. Customhouse, &c., building at Galveston, Texas," and addressed to JAS. H. WINDRIM, Supervising Architect. August 26th, 1890.

SEALED PROPOSALS will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M., on the 30th day of September, 1890, for all the labor and materials and putting in place complete the iron columns, iron floor and iron and wood roof construction, terra cotta arches, &c., for the U. S. Customhouse, Postoffice, &c., building at Port Townsend, Washington, in accordance with the drawings and specification, copies of which may be had on application at this office or the office of the Superintendent. Each bid must be accompanied by a certified check for \$500. The Department will reject all bids received after the time herein stated for the opening of the same; also, bids which do not comply strictly with all the requirements of this invitation. Proposals must be enclosed in an envelope sealed and marked "Proposal for the iron columns, iron floor and iron and wood roof construction, terra cotta arches, &c., for U. S. Customhouse, Postoffice, &c., at Port Townsend, Washington," and addressed to JAS. H. WINDRIM, Supervising Architect. September 1st, 1890.

SEALED PROPOSALS will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 P. M., on the 26th day of September, 1890, for furnishing and putting in place complete, one hydraulic passenger elevator, one direct acting freight elevator and one direct acting ash lift, for the U. S. Courthouse, Postoffice, &c., at Rochester, N. Y., in accordance with the specification and drawings, copies of which may be had on application at this office or the office of the Superintendent at Rochester, N. Y. Each bid must be accompanied by a certified check for \$500. The Department will reject all bids received after the time herein stated for receiving the same, also all bids which do not comply strictly with all the requirements of this invitation. Proposals must be enclosed in an envelope, sealed and marked "Proposal for Elevators for the U. S. Courthouse, Postoffice, &c., at Rochester, N. Y.," and addressed to JAS. H. WINDRIM, Supervising Architect. September 5th, 1890.

SEALED PROPOSALS will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M., on the 24th day of September, 1890, for all the labor and material and fixing in place complete the low-temperature hot-water heating and ventilating apparatus for the extension to the U. S. Postoffice, Courthouse, &c., building at Charleston, W. Va., including the reconstruction of the piping, taking down and moving and resetting of old apparatus, in accordance with the drawings and specification, copies of which may be had on application at this office or the office of the custodian. Each bid must be accompanied by a certified check for \$100. The department will reject all bids received after the time herein stated for the opening of the same, also bids which do not comply strictly with all the requirements of this invitation. Proposals must be enclosed in an envelope, sealed and marked "Proposal for the Low-temperature Hot-water Heating and Ventilating Apparatus, &c., for the extension to the U. S. Postoffice, Courthouse, &c., building at Charleston, W. Va., and addressed to JAS. H. WINDRIM, Supervising Architect. September 6th, 1890.

**FOR SALE.**  
**Foundry & Machine Shop,**  
PATTERNS, &c.

1 1/4 acres of ground, centrally located in city. Ready established trade. Three railroads running within 50 yards. To be sold for a division, on account of the death of both partners. Full particulars will be furnished to enquiring parties by writing to

**MURRAY & STEVENSON,**  
P. O. Box 346. ANNISTON, ALA.

**Texas Implement Business**  
FOR SALE.

On account of the death of the head of our concern, we wish to sell our entire stock of Machinery and Implements, good will and charter. We have been established since 1876, and have the reputation of being the largest dealers in the State. Will sell on easy terms.

**W. A. HUFFMAN IMPLEMENT CO.**  
Fort Worth, Texas.



**For Sale.****Railway Equipment**

If interested send for our Catalogue No. 13, just issued, of Locomotives, Cars, &c., of every description, for all kinds of work.

**A. S. MALES & CO.,**  
16, 16 and 17 Aetna Building, Cincinnati, O.

**Railway Equipment.**  
**REGINALD CANNING & CO.**

116 Broadway, New York.

Have on hand for sale all kinds of SECOND HAND ROLLING STOCK.

Established 1855.

**GEORGE PLACE,**

Late the George Place Machinery Co.

Equipment of Railway and Car Works

EQUITABLE BUILDING,

120 Broadway, - - NEW YORK

**CARLISLE MFG. CO.****Cars, Engines, Frogs**

AND SWITCHES,

CARLISLE, PA.

**Steam Fire Engines****FOR SALE.**

One Hunneman and one Button in first-class condition. Also all kinds of second-hand Engines and Boilers for sale cheap. For terms, prices, &c., address

**Lowell Steam Boiler Works,**

LOWELL, MASS.

Estimates given on New Work of every description.

**For Sale.****A PORTER-ALLEN****High Speed Automatic Engine.**

50 H. P. Cylinder 9x16 inches.

Used short time in United States Mint. Equal to new. No fuel engine built suitable for electric lighting. At a bargain. Address

**FRANK TOOMEY,** 131 N. 3d Street,  
PHILADELPHIA PA.

**FOR SALE.**

- 1 20-in. swing Engine Lathe, 14-ft. bed.
- 1 14-in. swing Engine Lathe, 7-ft. bed.
- 1 15-in. Crank Shaper.
- 1 24-in. B. G. Drill Press.
- 1 Water Grinder.
- 1 28 in. x 28 in. x 7 ft. Planer.

All the above are NEW and will be sold at a BARGAIN. Write for our complete catalogue.

**THE SEBASTIAN-MAY CO.**

182 W. Second St., Cincinnati, O.

**Second-Hand Machinery Cheap.**

- 1 8-H.P. Portable Engine and Boiler, on wheels.
- 1 10-H.P. Portable Engine and Boiler, on skids.
- 1 No. 1 Universal Grinding Machine. B. & S.
- 1 No. 2 Universal Grinding Machine, 40 in. bet. centers. Brown & Sharpe.
- 1 No. 2 Two-Spindle Profiling Machine. Bement.
- 1 Set 10 in. x 6 ft. Power Bending Rolls.
- 1 Trip Hammer.
- 1 No. 7 Root Blower. 1 No. 3 Sturtevant Exhaust.
- 1 No. 3 Universal Miller. Brainard.
- 1 No. 2 Lincoln Pattern Miller.
- 1 No. 1 Plain Miller. Brown & Sharpe.
- 1 Horizontal Drilling Machine.
- 1 Set 12 in. x 10 ft. Power Bending Rolls.

Write us for what you want and send description of Machinery that you wish to trade or sell.

**THE J. A. MACKINNON MACHINERY CO.**  
22 Warren Street, New York.

**BARGAINS.—Second-Hand Machinery.**

Good Condition.

**L. F. SEYFERT'S SONS,**

Nos. 437, 439, 441 N. Third St., Philadelphia Pa.

- 1 100 h.p. Horiz. Engine, cyl. 18x36 in. Rickards.
- 1 75 h.p. Horiz. Engine, cyl. 16x24 in. Rickards.
- 1 25 h.p. Lidgerwood Hoisting Eng., cyl. 10x12 in.
- 1 6, 8, 10, 15 & 20 h.p. Portable Hoisting Engs. single & double cyl. & drum. Combined & single.
- 1 15 h.p. Geisler Traction Eng. & Boiler on wheels.
- 1 12 h.p. Agricultural Engine & Boiler on wheels.
- 1 8 h.p. Agricultural Engine & Boiler on wheels.
- 1 40 & 50 h.p. Horiz. High Speed "Southwark" Aut. Cut-off Engines.
- 1 45 h.p. R. T. Boiler, (28) 4" tubes. 100 lbs.
- 1 25 h.p. R. T. Boilers, 42 in. x 10 ft. (28) 3 in. tubes.
- 1 8 h.p. Locomotive Boiler, (23) 2 in. tubes.
- 1 Upright Tub. Steel Boilers, 4 to 40 h.p., cheap.
- 1 Phila. Hyd. Wks. Steam Pump, 2 1/2 in. discharge.
- 1 Worthington Duplex Steam Pump, 1 1/2 in. diach.
- 1 Brinton & Henders Steam Pump, 2 in. discharge.

**Bargains in Machine Tools**

We have the following Machine Tools, taken mainly in exchange for those of our own manufacture. We will sell them low.

**LATHES—Second-hand.**

- 4 9-in. x 2 ft. P. & W. Bench Hand Lathes. G. Order.
- 1 10-in. x 3 ft. P. & W. Bench Hand Lathes. "
- 1 10-in. x 2 ft. 6 in. P. & W. Bench Turret Lathe. "
- 1 18-in. x 6 ft. Lathe. Fair Order.
- 1 20x8 Engine Lathe. Good Order.
- 1 20x13 Harris Lathe. Fair Order.
- 1 24x16 Curtis Lathe. Fair Order.
- 1 26-in. Stevens Pulley Lathe. Fair Order.
- 1 40x15 ft. 6 in. Lathe. Not Repaired.

**PLANERS—Second-hand.**

- 1 10-in. Traveling Head Shaper. Good Order.
- 1 20-in. Smith & Co. Shaper. Nearly New.
- 1 24x24x4 Planer. Good Order.
- 1 26-in. Geared Shaper, Old Style, L. D. & Co. Good Order.

**MISCELLANEOUS—Second-hand.**

- 1 Hendey 3 Spindle Drill Press. Good Order.
- 1 24-in. Drill Press. Good Order.
- 1 34-in. Drill Presses. Fair Order.
- 1 36-in. B. G. Drill Press. Good Order.
- 1 Standish Foot-Power Hammer. New.
- 1 Knight Punch and Shear (Comb). New.
- 1 12-in. Bement Slotter. Good Order.
- 1 Natl. Double End Bolt Cutter. A No. 1 Order.
- 1 Emery Grinder and Stand. Good Order.
- 1 No. 1 Sturtevant Noiseless Blower. Good Order.
- 1 750 lbs. Steam Hammers. (Bement, Miles & Co.) Good Order.
- 1 Punch, 18-in. throat to punch 1 in. in 3/4 iron. A No. 1 Order.

Write for Prices.  
New additions constantly made to this list.  
Complete estimates made on outfits.

**THE LODGE & DAVIS MACHINE TOOL CO.**  
Cincinnati, Ohio.

Manufacturers of Engine Lathes, Shapers, Upright Drills, etc. Dealers in Iron and Brass Working Machinery.

Western Store 68 & 70 S. Canal St., Chicago.  
Eastern Store, 64 Courtlandt St., New York.

**FOR SALE.**

- Five Single Surfacers. Three Double Surfacers.
- Three eight-inch Matchers (four-sided).
- Two fourteen-inch Matchers (four-sided).
- Two twenty-four-inch Matchers (three-sided).
- ALL SECOND-HAND. Send for full list to

**THE PREBLE MACHINE WORKS CO.**

38 & 40 W. MONROE ST., CHICAGO, ILL.

**FOR SALE.**

**JAMES MURRAY & SON.**

One 40 H. P. Horizontal Steam Engine, (second-hand). One 60 H. P. Horizontal Tubular Boiler, (second-hand). New Engines and Boilers on hand and built to order. One S. H. Steam Pump, one S. H. Steam Hammer,

**PULLEYS, HANGERS & SHAFTING.**  
102 to 108 E. York St., Baltimore.

**SECOND-HAND MACHINERY.**

- 1 Iron Planer, planes 10 feet long, 52x48 in.
- 1 " " " 8 feet " 39x30 in.
- 1 " " " 5 feet " 25x24 in.
- 1 " " " 3 feet " 16 in. wide.
- 1 Iron Pl. planes 8 ft. long, 35 in. x 36 in. Sellers, 2 hds.
- 1 Engine Lathe, 20-ft. bed, 72 in. swing. Good.
- 1 Engine Lathe, 10-ft. bed, 20-in. swing. Good.
- 1 Engine Lathe, 8 feet bed, 15 inch swing.
- 1 " " " 6 " " 18 " " chuck.
- Co. make, and various other sizes.
- 1 Small Turret Head Lathe.
- 1 20 inch Plain Drilling Machine.
- 1 6 1/2 in. Slotter, automatic feed.
- 1 40-lb. Bradley Cushioned Hammer.
- 1 No. 5 Stiles & Parker Press, A1.
- 1 Small Power Press.

Send for list Second-hand tools.  
**NEW YORK MACHINERY DEPOT,**  
Brooklyn Bridge Store, 16, New York.

**Second-Hand MACHINERY in Good Order****FOR SALE CHEAP.**

- Engine Lathes—62 in. x 17 ft.; 42 in. x 12 ft.; 32 in. x 12 ft.; 29 in. x 15 ft.; 24 in. x 10 ft.; 22 in. x 8, 10 and 12 ft.; 20 in. x 8 and 14 ft.; 15 in. x 6 and 8 ft.; 1 each 24 in. x 30 in. and 24 ft.; 24 in. x 12 ft.; 24 in. x 15 and 16 ft.; 18 in. x 10 ft.; 20 in. x 10 ft.; 20 in. x 12 ft.; 1 each 16 in. x 6, 8 and 10 ft.; 6 each 14 in. x 6 ft.; 1 12 in. x 5 ft.; 2 each 11 in. x 4 ft. and 5 ft.; 10 in. x 3 1/2 ft. foot power.
- 1 each Planer, 24 in. x 24 in. x 5 and 8 ft.
- 1 each Planer, 30 in. x 30 in. x 8 ft.
- 1 Planer, 54 in. x 52 in. x 12 ft., 50 in. x 50 in. x 17 ft.
- 1 Planer, 40 in. x 40 in. x 14 ft.
- 1 Planer, 42 in. x 42 in. x 10 and 12 ft.
- 1 Planer, 22 in. x 20 in. x 4 and 5 ft.
- 1 Planer, 16 in. x 16 in. x 3 ft.
- 1 Planer, 42 in. x 42 in. x 12 ft., with two heads.
- 1 Planer, 50 in. x 50 in. x 17 ft., with one head.
- 1 Planer, 100 in. x 100 in. x 18 ft., with two heads.
- 1 Engine Lathe, 22x22 ft., good order. Niles.
- 1 New Horizontal Boring Machine, with facing attachment, Newark Machine Tool Co., makers.
- 1 24x18x4-foot Planer. Ames.
- 1 Drop Hammer, 75 pounds.
- 1 48-in. Radial Drill.
- 1 Shaper each 6, 10, 12, 15, 20, 24 and 30-in. strike.
- 3 Crank Planers. 6 Lincoln Pat. No. 2 Millers.
- 1 Universal Miller. Brown & Sharpe.
- 1 each 2, 3, 4 and 6 Spindle Gang Drill.
- 1 each Nos. 1, 3, 4 and 5 Screw Machines.
- 1 each 40 and 60 pound Vertical Hammers.
- 1 No. 33 Ferracute Press. 1 Nut-facing Machine.
- 1 No. 2 1/2 Fowler Press.
- 10 Foot Presses, assorted. 8 Power Presses, ass'd.
- 12 Punching and Shearing Machines, assorted.
- 2 Return Tubular Boilers, 35 horse-power.
- 1 Bolt Cutter, each 1/4 in. to 1 in. and 1/2 in. to 2 in.
- 1 No. 1 Hand Millers. Pratt & Whitney.
- 1 Horizontal Engine each 25 and 45 horse-power.
- 1 Horizontal Boring Machine, 36 in. x 6 ft.
- 2 each 8 and 13-inch Slotters. Correspondence solicited.
- 1 Power Mortising Machine.
- Also full line of New Machinery.

**PRENTISS TOOL & SUPPLY CO.**  
P.O. Box 1,352. 115 Liberty St., New York City.

**THE NEW YORK RAILWAY SUPPLY CO., Limited,**  
40 and 42 Wall Street, New York.**Steel Rails and Railway Equipment**

of all descriptions, for Cash or on the Car Trust Plan.

**COMPLETE OUTFITS FOR ALL CLASSES OF RAILROADS,**

Steam, Electric, Horse, Logging, Coal and other Commercial Roads at the lowest market prices and most favorable terms. Correspondence solicited from all new and old enterprises.

**BOILERS, ENGINES, STEEL RAILS**

**LIGHT LOCOMOTIVES, RAILS and EQUIPMENT,**

Cotton Gins, Saw Mills, Wood - Working Machinery, and Heavy Hardware.

**F. A. ESTEP,**

OFFICE AND WAREHOUSE:

Corner Market and Cowart Streets, CHATTANOOGA, TENN.

And Track Material complete for Logging and Mining Roads and Industrial Enterprises on the

**Instalment Plan.**

Payment, cash margin 25 per cent, balance monthly for 24, 36 or 60 months. Also

**Locomotives and Cars**

On same terms. Second-hand Rails purchased.

**The STEEL RAIL SUPPLY CO.**

HUMPHREYS & SAYCE, Mgrs., 10 Wall St., New York. We have no Agents.

**— Steel Rails, all Weights. —**

I have FOR SALE a second-hand standard gauge Locomotive, Rogers build, cylinder 12 in. x 20 in., four drivers, wood burner, in good condition. Delivery in South Carolina. Full description on application. I am prepared to furnish Steel Rails, Frogs and Switches, Fish Plates, Bolts and Nuts; also new or second-hand Standard or Narrow-gauge Railway Equipment.

**BENJAMIN WATSON, 40 Wall Street, New York.**

**FOR SALE.** Rails, Spikes, Fastenings, Frogs, Switches and Crossings. Locomotives, Dummies, Cars, Wheels and Axles. Complete outfits for logging Roads and Street Railways. New and Second-hand.

**WILLIAM MINNIGERODE, Dealer in RAILWAY SUPPLIES,**  
ROOM 8, JOHNSTON BUILDING, CINCINNATI, O.

**Keep Your Belts From Slipping,**

And Save Your Power by Using Friction Covering for Pulleys.

Satisfaction Guaranteed. Easily Applied. No Rivets. Effective.

**NATIONAL PULLEY COVERING CO., Baltimore, Md.**

JAMES IRVINE, Pres. GEO. B. F. COOPER, Vice-Pres. WM. V. CAROLIN, Sec. & Treas.

**NEW YORK EQUIPMENT CO., 15 Wall Street, New York.**

Have for Sale for Cash or Lease on Easy Terms on the CAR TRUST PLAN.

**LOCOMOTIVES,**

**PASSENGER AND FREIGHT CARS, ETC.**

Of both Standard and Narrow Gauge, to Railroad Companies, Logging Railroads, Mining Companies, Contractors, Etc.

We have on hand 3,000 tons of 35-lb. second-hand iron T rail, good to relay We carry in stock second-hand rail of any section desired. We are prepared to furnish Locomotives to railroad companies or contractors on monthly rentals for long or short terms. Send for Circulars. Correspondence solicited.

**FOR SALE for Cash, or Credit on Car Trust.**

- 20 Second-Hand Narrow Gauge Passenger Coaches.
- 20 Second-Hand Standard Gauge Passenger Coaches.
- 30 New Standard Gauge Passenger Coaches, all modern improvements. Price \$3,700 each.
- 40 Second-Hand Single Horse Cars and 30 Double Open Horse Cars. New York delivery.
- 40 Second-Hand Narrow Gauge Locomotives. Different sizes.
- 60 Second-Hand Standard Gauge Locomotives Different sizes, good condition.
- 270 tons of new 60 lb. steel rails with fastenings complete. Offer wanted.
- 1,000 tons of 40 lb. second-hand steel and iron rails.
- 800 tons of 35 lb. iron and steel rails. Good order.
- 1,000 tons of 30 lb. steel rails, ostensibly as good as new. Americus, Ga., delivery.
- Also materials railroads use, and bonds negotiated on good roads.

**Estimates Furnished for Electrical Equipment**

UNDER LATEST IMPROVEMENT.

Apply to **ALFRED W. LADD, 44 Broadway, New York.**

**Cotton Machinery.**

- 1 3,000 Spindle Carpet Warp Plant.
- 1 200 Loom Plant for Osnaburgs, Sheetings, Drill, &c.
- 1 System Bagging Machinery, capacity 30,000 lbs. per week.
- 1 Full System of Print Cloth Machinery, 160 LOOMS.

110 Potter 36 in. Cards, 18 in. Doffers, Quick-Running Comb, nicely clothed with ENGLISH Clothing. These Cards are a BARGAIN.

Also a large lot of Miscellaneous Machinery in first-class condition.

**L. Godfrey & Co., 147 Gaspee Street, Providence, R.I.**



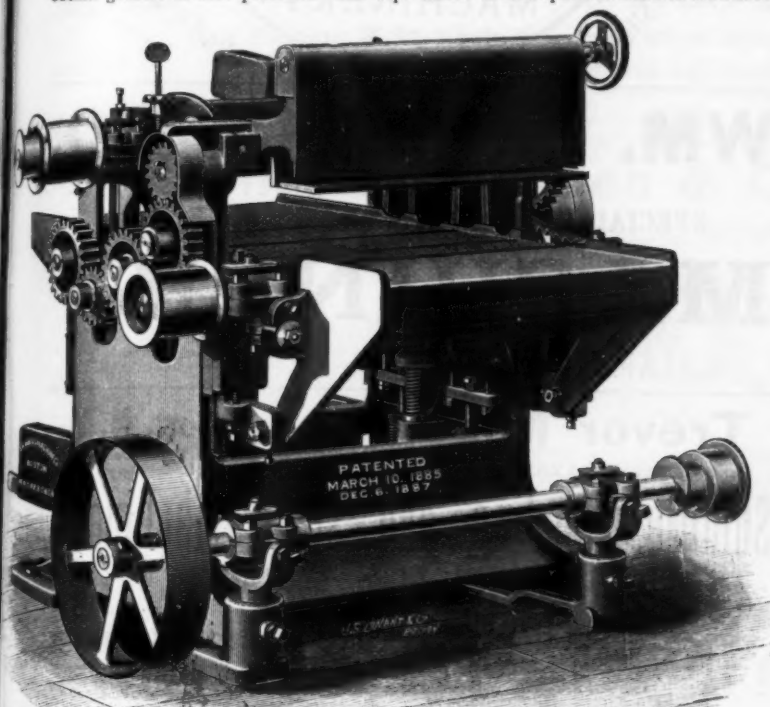
**No. 3 Improved Double Shop Surfacers.**

The S. A. Woods Machine Co.'s No. 3 improved double surfacer shop planer, which is shown on this page, is designed for general shop purposes, where double as well as single surfacing is required.

The frame is cast in one piece, affording permanent stability to all parts. The feed is very strong, consisting of two top and two lower steel rolls, all driven by simple and durable expansion gearing and belt running on cone pulleys of ample capacity, allowing two changes. The top feed-in roll is fluted and is held down by weights, which slide on levers and can be moved to obtain greater or less pressure. The top

of forgings for the Thomson-Houston Co. An important portion of the former concern's work is the building of tools for digging artesian wells, as is also the manufacture of the Beaudry duplex power forging press and improved upright pillar hammer. About 150 men are now being employed, and this number is almost daily being augmented.

AN engine possessing the desirable features of simplicity in construction, economy in space and fuel, durability, safety and strength is appropriately named the Common Sense engine and is illustrated in a pamphlet by the manufacturers, the Common Sense Engine Co., of Springfield, Ohio. A description in detail of the boilers,



NO. 3 IMPROVED DOUBLE SHOP SURFACER.

feed-out roll is plain, and provided with shaving cap and steel scraper. The bed on which the stuff is planed moves up and down on gibbed ways, located so as to obtain perfect steadiness. Two screws of large dimensions raise and lower the bed. Pressure bars of the most effective and convenient form are applied in connection with the top cylinder. The under cylinder is hung in a frame with journal boxes connected. This frame is clamped to the movable bed by a binding bolt at each end. By loosening these bolts the cutter-head and its frame can be raised or lowered by operating adjusting screws provided for the purpose; either end can be adjusted independently. The end table beyond the under cutter-head can readily be swung down out of the way when necessary to get at the under cutters to set, adjust, or re-sharpen them. This table can also be adjusted up and down. The pulleys on the cutter-heads, the latter being made from the best steel, are  $4\frac{1}{2}$  inches diameter for  $4\frac{1}{2}$ -inch belt, and should make from 3,800 to 4,300 revolutions per minute.

Further information can be had by addressing the S. A. Woods Machine Co., makers, Boston, New York or Chicago.

THE Lockwood Manufacturing Co., of East Boston, Mass., since their big fire have rebuilt and enlarged their plant, and their machine shop now ranks as one of the most completely equipped in the country. They have lately added \$5,000 of new machinery, and are at present engaged in building a new wharf 565 feet long. The company is now very busy with special work, and report business better than it has been for ten years. At present the Lockwood Co. are making a large number

engines and feed mills made by this company is contained in the catalogue, as well as cuts showing this boiler and engine operating a machine shop, cotton gin, saw and feed mills.

ONE of those large importers of cotton, worsted and woolen machinery who have lately become impressed with the importance of the South in the manufacture of fabrics is Mr. C. R. English, of Boston, Mass. Mr. English is now supplying twelve mills and factories in the South with machinery.

WM. SIMPKIN A. S. M. E.

## SIMPKIN & HILLYER, ENGINEERS and CONTRACTORS RICHMOND, VA.

Manufacturers of and Agents for Steam Engines, Boilers, Pumps and Heavy Machinery. Economical Steam Plants, Rope and Belt Driving. Special Machinery for Chemical and Fertilizing Works, Gas, Water and Creosote Works. A specialty of the "Warwick" Pole Road Locomotive, "Warwick" Tram Road Locomotive, and the "Warwick" Silent Steam Street Motor. Castings furnished. Repair work solicited. Consultations, Arbitrations and Valuations. Engines indicated. Plans, Specifications and Estimates prepared. Correspondence invited.

WORKS—Newport News, Va.

GENERAL OFFICE—1105 Main St., Richmond, Va.

SEND ALL REPAIRS TO OUR WORKS.

HERMANN SCHMIDT, President.

R. F. HUDSON, Secretary and Treasurer.

W. SIMPKIN, Vice-President and Gen. Agent.

## THE RICHMOND ICE-MACHINE CO.

Manufacturers of the Most Improved

RICHMOND, VA.

## Ice-Making and Refrigerating Machinery

ON THE COMPRESSION PLAN.

We guarantee the proper working of our machinery. All working parts built to gauge, so they can be readily duplicated, and nothing but the very best material used. Specifications and estimates furnished. Correspondence solicited.

P. O. Box 315.

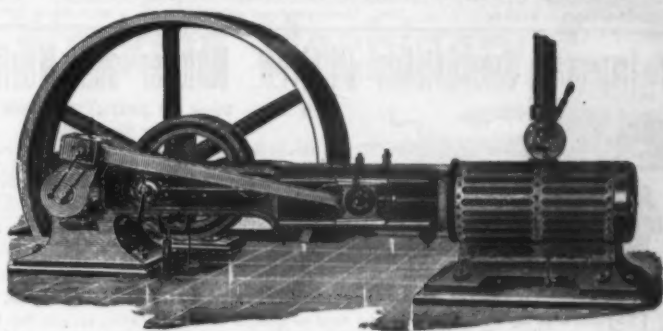
GENERAL OFFICE 1105 MAIN STREET, RICHMOND, VA.

Send for our Pamphlet "How to Make an Ice Factory Pay."

## E. J. WOOD, Consulting Engineer and Contractor,

243 BROADWAY, NEW YORK.

Superintendent of the Construction and Erection of Factories,  
Steam Plants and all kinds of Machinery.  
Engines Indicated, Valves Adjusted and Power Measured.



COMPLETE STEAM PLANTS. BOILERS, ENGINES, Every Description.  
SHAFTING, PULLEYS, HANGERS.  
DRAWINGS AND SUPERINTENDENCE. ECONOMY GUARANTEED.  
CORRESPONDENCE SOLICITED.

I also make a Specialty of Taking Down, Removing and Re-erecting Steam Plants and Machinery of every description. Send for Catalogue F.

SECTIONAL  
INSULATED AIR

COVERINGS

For PIPES, BOILERS, DRUMS and all other hot or cold surfaces. ASBESTOS CEMENT, PACKING, SHEATHING, &c.  
SHIELDS & BROWN CO.  
148 Worth St., NEW YORK. 240 and 242 Randolph St., CHICAGO.

Especially adapted for the Elevation of Clear, Gritty, Thick, or Acidulous Liquids, Quickly, Cheaply and Efficiently

PATENTED  
U. S. AND CANADA.

## THE NEW PULSOMETER STEAM PUMP.

without Engine, Machinery, Oil, Expensive Power, Skilled Labor, or Material Wear. Send for Illustrated Catalogue.

PULSOMETER STEAM PUMP CO., 120 Liberty St., New York.

STEVEN'S PATENT IDEAL COMBINED DIVIDER & CALIPER SPRING SCREW THREAD CALIPERS

No. 62.

Price, per set.

All nickel.....\$4.00

Packed for transmission by mail.

Idea. surface Gauges, Depth Gauges, Ideal and Leader Spring Dividers and Calipers, and Fine Machinists' Tools. Illustrated catalogue free to all.

J. Stevens Arms &amp; Tool Co., P. O. Box 215 Chicopee Falls, Mass.

TOOLS.

Leader, No. 71.

Price, by mail, postpaid.

3 inch.....\$0.75 5 inch.....\$1.00

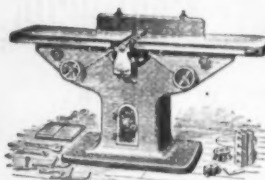
4 ".....0.50

These Tools for fine workmanship and finish, have no equal in the world.

Illustrated catalogue free to all.



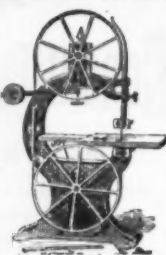
171 & 173 W. SECOND STREET, CINCINNATI, OHIO.



OF EVERY DESCRIPTION.

**Planing Mills, Furniture and Chair  
Factories, Carriage, Wagon  
and Agricultural Works.**

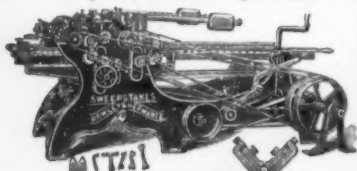
Write for our latest catalogue and price-list. Correspondence solicited.



UNIVERSAL WOOD-WORKER.

NO. 3 BAND -AW

Is Simple, Strong and Durable. Never falls in  
Yellow Pine or Hard Lumber.



Recent improvements make it the most complete Planer, Masher and Moulder in the market for the money, which is attested by daily testimonials. No other Planer and Masher made that uses the Ellis Patent Three-Part Journal Head and Arbor for making the most perfect Mouldings and all odd work. No Belts. No Cylinder. All Cutter Heads are made of Cast Steel. All Expansion Links and Gears are BUSHED with BRASS. It has a POWERFUL P.E.D. Heavy countershaft furnished with a heavy pulley. Write for full catalogue, also for our 80-page catalogue, showing a full line of Book Binding and Furniture Factory Machinery made by us. Address

**ROWLEY & HERMAN**, Williamsport, Pa., U. S. A.

Price: {	To plane with top head 24" wide, under head 20" wide & match 12½" wide, wt. 3,500 lbs.	\$530
	" " " 24" " and match 12½" wide, weight 3,000 lbs.	410
	" " " 20" " " 3½" " 2,600 lbs.	360

## MANUFACTURES OF

Office & Works,  
34 CLAY ST.  
Brooklyn N. Y.

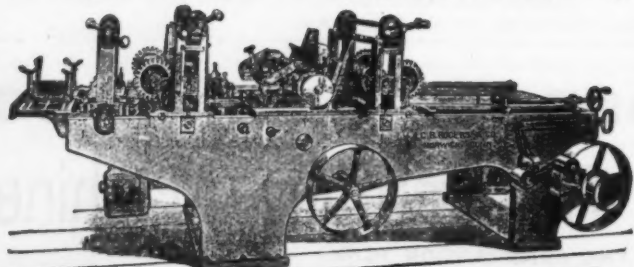
No. 84.—10-inch Patented Fast Feed Moulding Machine.

**SPECIALTIES:** Fast-Feed Sizing, Planing and Matching, Flooring and Ceiling, Inside Moulding and Double Surfacing Machines; also the celebrated GLEN COVE DOUBLE DECKER and GLEN COVE SPECIAL.

## Planing and Moulding Machines a Specialty.

91 Liberty Street, NEW YORK. 172 High Street, BOSTON. 61 S. Canal Street, CHICAGO.  
**WORKS: SOUTH BOSTON, MASS.**

**MAKERS OF Improved Wood-Working Machinery.**



**MORTISERS, TENONERS, BAND AND SCROLL SAWS, &c.**

Office and Works, Norwich, Conn.

Wareroom, 109 Liberty Street, N. Y.

THOS. K. CAREY & BROS., AGENTS, BALTIMORE, MD.

MOLDERS.

PRE-EMINENT IN QUALITY.

**SAWS**  
**THE "BARRY" BAND**  
**SAWS**

And the "BARRY" CIRCULAR SAWS  
 Manufactured by **W. B. BARRY SAW & SUPPLY CO.** Nos. 124 to 128 S. Penn Street,  
**INDIANAPOLIS, IND.**

A TRIAL SOLICITED. 723

**A TRIAL SOLICITED.**

And the "BARRY" CIRCULAR SAWS  
Manufactured by W. L. BARRY SAW & SUPPLY CO. Nos. 124 to 126 S. Penn Street,  
INDIANAPOLIS, IND.





No. 2½—Pacific Planer and Matcher.



No. 4½—Smoothing Planer.



Horizontal Borer.



No. 2—Self-Feed Rip Saw.



No. 3—Molding Machine.



No. 2 Fret Scroll Saw.



No. 2 Band Saw.

W. H. DOANE, Pres't.

**J. A. FAY & CO.**

D. L. LYON, Sec'y.

CINCINNATI, OHIO.

Manufacturers of  
—PATENT—

**Improved Wood-Working Machinery**

OF EVERY DESCRIPTION,

For Planing Mills, Sash, Door and Blind Shops, Furniture, Carriage and Wagon Factories,  
Spoke, Wheel and Agricultural Works, Car Shops, etc.

Awarded "GRAND PRIX" at the Great PARIS EXPOSITION of 1889.

Every Machine Tested and Warranted.  
Send for Circulars and Estimates.

Established  
1853.

**Wheeler, Madden & Clemson Mfg. Co., Middletown, N.Y.**

Manufacturers of Hand, Cross-Cut and Wood

No. 24 Hand, Panel and Rip Saws—26-inch, list \$20.00  
per dozen.



PRICE, QUALITY and general SUPERIORITY taken into consideration, this is the Best Hand Saw  
on the market for Mechanics use.

**SAWS.**

Extra Thin Back. Patent Handle. Hollow Back Blade.

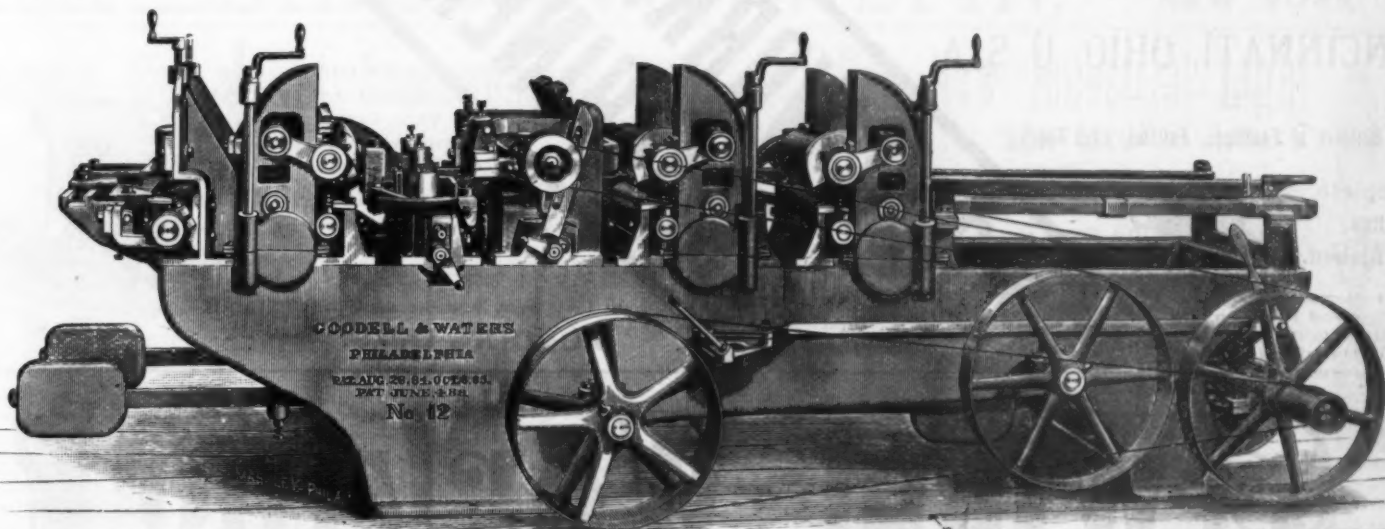
PERFECT TEMPER. ELGANT FINISH. SUPERIOR FILING.

CROSS-CUTS furnished in all the leading shapes, sizes and styles of teeth, in both WIDE,  
NARROW and ONE MAN Saws. Only the very best of Crucible Steel of our own manufacture  
enters into our goods, and we fully warrant them in each and every particular. We are now turning  
out the finest goods ever produced in our line. For Sale by all Leading Jobbers and Dealers.

**GOODELL & WATERS,**

BUILDERS OF

**Wood Working Machinery**



No. 12 SIX-ROLL PLANER AND MATCHER.

To Double or Single Surface 24 inches wide up to 6 inches thick and match 19 inches wide. Weight 7,000 pounds.

Our line of Planing Mill Machinery is very complete. During the past year we have introduced many new and improved tools, and you will do well to consult our catalogue.  
Estimates cheerfully given for complete mill outfits.

**GOODELL & WATERS,**

Western Warerooms, Chicago and San Francisco.

MANUFACTURERS,

3002 Chestnut Street, Philadelphia, Pa.

Established 1874.

**Cleveland Twist Drill Co.**

MANUFACTURERS OF

MANUFACTURERS OF  
Taper Shank Drills,  
Straight Shank Drills,  
Blacksmith Drills,  
Bitstock Drills,  
Straight Fluted Drills,  
Machine Bit Drills

Send for Catalogue.

OFFICES—

Cor. of Lake & Kirtland Sts., Cleveland, O.  
MORTON, REED & CO., BALTIMORE.

Write for Discounts.

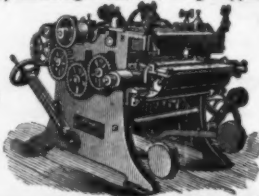
Self-feeding Reamers  
Expanding Reamers  
Shell Reamers  
Stay-bolt Taps,  
Taper Reamers



**J. S. CRAHAM & CO.**

261 LYELL AVENUE, ROCHESTER, N. Y.

Manufacturers of Planers and Matchers, Surfacers, Timber Planers, Resawing Machines, Gang Ripping Machines, Self-Feed Saw Tables, Moulders, Pony Planers, Etc.

SEND FOR  
PRICES.

**THE CANTON SAW CO**  
MANUFACTURERS OF **KNIGHT'S IMPROVED MILL DOGS.**  
**SOLID AND INSERTED TOOTH CIRCULAR SAWS**  
Shingle (concave) Grooving  
Heading and other Saws  
125-137 SOUTH REX ST. CANTON, O. U.S.A.  
Over 15,000 in use in the United States and Canada.  
SEND FOR DESCRIPTIVE CIRCULAR and PRICE LIST.

**PETER GERLACH & COMPANY,** CLEVELAND, OHIO.Manufacturers of **Alligator Chisel-Bit Saws,**The **CHAMPION STATE** HEADING and SHINGLE MACHINES. Ice Tools and Mill Supplies.

**WESTERN FILES** WARRANTED SUPERIOR QUALITY  
WESTERN FILE CO. LIMITED  
BEAVER FALLS PA.

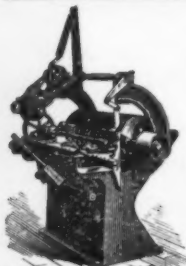
John L. Whiting,  
Wm. S. Whiting,  
Lew C. Hill.**JOHN L. WHITING & SON,**

MANUFACTURERS OF

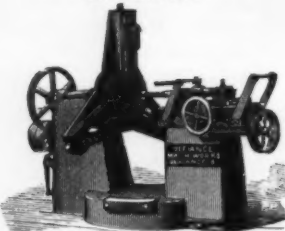
**BRUSHES**

Cor. High and Purchase Sts.

BOSTON, U. S. A.



Established 1850.



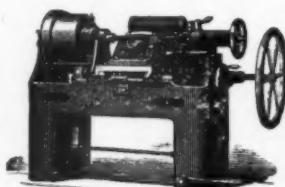
Wheel-Boxing Machine.

**Defiance Machine Works,**  
DEFIANCE, OHIO.

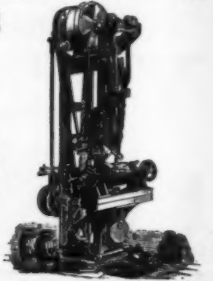
MANUFACTURERS OF

HUB, SPOKE, WHEEL, BENDING  
**Wagon and Carriage Machinery.**

Patent Plow-Handle Benders, Shapers, Cut-off Saw and Revolving Polishers, Hot-Form, Double and Single Bent Pole and Express Shaft Benders, Neck-Yoke, Singletree, Brush Handle Lathes and Finishing Machines. Estimates and Circulars given upon application.

COMPLETE OUTFITS  
FURNISHED.

Patent Hub-Turning Machine.



Patent Automatic Double-Chisel Hub-Mortising Machine. Built in three sizes.

**THE EGAN COMPANY,**

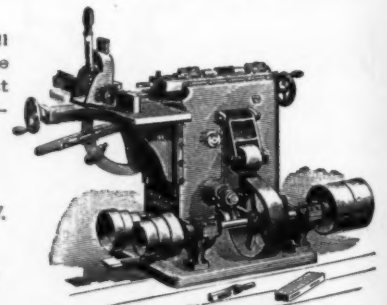
228 to 248 West Front St.

CINCINNATI, OHIO, U. S. A.

Builders of Faultless, Faithful, Fast Feeding

Complete  
Outfits  
Furnished.Originators and Designers of  
Time and Labor Saving  
Machines to Reduce Cost  
of Manufacture.

**WOOD WORKING  
MACHINERY**  
Specially Adapted for  
A Full  
Line of the  
Very Latest  
Improved  
Machines.  
The Highest Efficiency  
Yet Attained.  
We have a Special Department devoted to  
**MOLDING BITS.**

Planing Mills, Sash,  
Door and Blind Work,  
Saw Mills, Furniture, Chair  
and Bracket Factories, Car,  
Railway & Agricultural Works,  
Buggy, Carriage & Wagon Build-  
ers, Spoke, Wheel and Handle Fac-  
tories, and General Wood Workers.

NEW SQUARE CHISEL MORTISER AND BORER.

**Wood Working  
Machinery**

COMPLETE OUTFITS FOR PLANING MILLS

**H. B. SMITH MACHINE CO.**Send for catalogue and visit our extensive  
warerooms if possible.

925 MARKET STREET.

PHILADA., PA., U. S. A.

For **SOAP MAKERS** and **BUTCHERS' MACHINERY**, ADDRESS **H. Wm. Dopp & Son, Buffalo, N. Y.**



Send for Illustrated Catalogue.



GRAHAM, BAILEY & CO.  
1430 TO 1440 NIAGARA ST.  
BUFFALO, N.Y. U.S.A.



# THE "WELLS LIGHT."

WALLWORK & WELLS' PATENTS. (Registered Title.)

Powerful Portable Light <sup>UP</sup> TO 2,000 C. P.

Self Contained. No Outside Motive Used. Complete in Itself, as shown by Accompanying Cut. Simple in Construction. Any Laborer can handle it.

3,000 SOLD LAST SEASON.

UNAFFECTED BY WEATHER.

FOR FULL INFORMATION  
• APPLY TO

KEEGAN & HALPIN,

44 & 46 Washington St.,  
NEW YORK.

## Coleman Gas Light Improvement Co.

CONSTRUCTION OF

Fuel and Illuminating Gas Plants,  
Petroleum (Crude Oil) Gas Works,  
Gasoline Gas Machine Gas Plants,  
GAS STREET CAR MOTORS  
GAS POWER Maintained at Half the Cost of Horse or Electric.  
CHATTANOOGA, TENN.

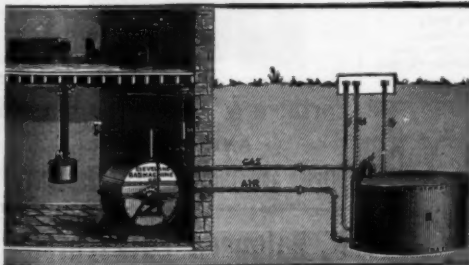
## The CLEVELAND GAS MACHINE CO.

176 CENTRAL WAY,  
CLEVELAND, O.

MANUFACTURERS OF

### Improved Gas Machines For Illuminating and Heating

purposes. Especially adapted for  
Canning Factories, Mills, Churches  
and Stores; Country and Suburban  
Residences requiring from 20 to  
1,000 lights; also Gas-Soldering  
and Metal-Heating Outfits and  
Special Machines for Meat-Pack-  
ing Establishments. Correspond-  
ence solicited. Send for illus-  
trated circular.



SAVE GAS. REDUCE BILLS AND SECURE BETTER LIGHT.

## The American Gas Saving Co's Gas Controller.

Over 200,000 in use. Saves from 15 to 50 per cent. according to pressure in mains.

Adopted by U. S. Government after competitive tests; New York Elevated Railroad (saving \$11,519.37 in five months, over \$100,000.00 in five years). In use in thousands of Mills, Factories, Hotels, Depots, Public Buildings and Private Houses. Send for descriptive circular and testimonials. Find size of meter on brass plate in front with maker's name.

Full directions for attachment and testing sent with each. Controllers sent for trial on receipt of price, and money refunded, less express charges, if unsatisfactory and controllers returned in good order. All orders C. O. D. Agents wanted.

AMERICAN GAS SAVING CO., - - - 35 Broadway, N. Y.

## The New Industrial Light "Lucigen"

BRILLIANT, POWERFUL AND DIFFUSIVE.

Burns Petroleum Oil Sprayed by Compressed Air.

SIMPLE, SAFE AND ECONOMICAL.

Thousands in use in Iron Works, Machine Shops, Railroad Yards,  
etc. etc., in Europe and in the United States.

Lamps and Burners from 200 to 10,000 Candle Power.

MANUFACTURED BY THE

INDUSTRIAL LIGHT COMPANY,  
196 Temple Court, New York City.

AUTHORIZED REPRESENTATIVES—Rand Drill Company, New  
York City; Buffalo Engineering Co., 228 Pearl Street, Buffalo,  
N. Y.; W. H. Carruthers & Co., Chamber of Commerce Build-  
ing, St. Louis, Mo.; Joseph Parks, Bay View, Milwaukee, Wis.;  
Isaac Reynolds, 5 Euclid Avenue, Cleveland, Ohio; Parvin &  
Co., 133 S. Fourth Street, Philadelphia, Pa.



### TORCHES

To burn Gasoline and Oil. 500,000 in use.  
Not affected by wind or weather.

### Gasoline Furnaces

For plumbers' use. Powerful Flame. Remova-  
ble Melting Pot. Wind does not affect it.

### GASOLINE PAINT BURNERS.

Steel Bodies. Light and Strong. Adjustable  
Burner.

ALL GOODS GUARANTEED.

Sole MAKERS

The Schneider & Trenkamp Co.  
CLEVELAND, O.



RELIABLE

Torches.  
Furnaces.  
Paint Burners.

To Secure SOUTHERN TRADE

ADVERTISE IN THE

MANUFACTURERS' RECORD.

## TRADE NOTES.

THE Schuyler Electric Co., of Middletown, Conn., is enjoying splendid sales, and in addition to the contracts mentioned August 16, is installing a 200 arc-light plant at Monroe Mich., and another of 50 lights at Spencer, Ind. The company reports business as being exceedingly good in all its lines.

THE partnership heretofore existing between H. S. Jackson and W. I. Cherry, under the firm name of H. S. Jackson & Co., has been dissolved by mutual consent, Mr. Cherry retiring from the firm. Mr. Jackson will continue the iron and steel brokerage business under the old firm name at Nashville, Tenn.

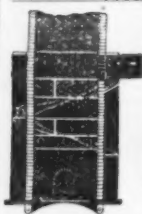
THE American Supply Co., of Providence, R. I., is agent for the Keasey iron center split wood pulleys, which, as the name implies, are made with an iron hub and have narrow spokes against the wind, presenting a surface of only  $1\frac{1}{2}$  inches. Patent paper line bushings are used, giving a firm grip. This pulley is said to have a splendid belt surface and other features of value.

ORNAMENTAL wire work of all descriptions is illustrated in the fall supplement of E. T. Barnum, Detroit, Mich. The book opens with cuts of various styles of flower stands, and each succeeding page presents articles in wire work, including screens, stove, grave and window guards, supports, springs, bank and office railings, automatic gates, etc. The catalogue is gotten up in an attractive style, and just what is desired can be readily found by an examination of its contents.

THE old established firm of Merchant & Co., of Philadelphia, Pa., whose products are known and appreciated by many of our readers, have issued printed matter illustrating two requisites of modern buildings, viz: a ventilator and roofing. The ventilator is known as the Star and presents an attractive appearance. It is very useful for smoky or gassy chimneys, being designed to insure an upward draught, and is recommended for the successful ventilation of churches, schoolhouses, public buildings, factories of any description, sewer and drain pipe ventilation, and, in fact, wherever fresh air is desired. Gilbertson's Old Method roofing is described at length; this is the first quality and highest price plate made by Merchant & Co. They have two other brands of less weight. Figures are given as to the relative value of different kinds of roofing, and the firm has prepared a book entitled "A Tin Roof," giving full information about tin roofing, showing how to select, lay and paint; also a pamphlet which is a valuable reference in specifying for roofing of any brand.

ALL manufacturers and others connected with factory building will be more or less interested in the new jute mills now being erected in Brooklyn, N. Y., for the American Manufacturing Co. To some extent it marks an era in mill building in this country, by reason of the departure from lines usually laid down for work of this kind. The distinguishing feature of this mill, as compared with the style of mills usually erected for cotton, woolen, worsted and other textile mills, lies in the manner in which the architects have planned the arrangement of the columns, their object being to obtain clear floor space and plenty of light. The main building is 200 feet wide, divided into eight sections of from 23 to 27 feet 8 inches span each between columns. The length is about 228 feet, divided into fourteen 16-foot bays or distances between columns, instead of the 8 to 10-foot bays ordinarily used in mill construction. Messrs. Drew, Baldwin & Co.,

mill architects and engineers, of New York city, a firm whose business is confined exclusively to mill and factory work, are the company's architects, and the work is being done under their supervision.



**VICTOR COLLIAU,**  
Sole Manufacturer  
OF THE  
**Improved Patent HOT BLAST  
Colliau Cupola.**  
Address 287 Jefferson Ave.  
DETROIT, MICH.



**The COLLIAU  
PATENT  
Cupola Furnace.**  
Adapted to all Foundries,  
The Most Economical,  
The Lowest in Price.  
MANUFACTURED EXCLUSIVELY BY  
**BYRAM & CO.**  
DETROIT, MICH.

**JAS. P. WITHEROW,**  
ENGINEER & CONTRACTOR,  
**Furnace & Steel**  
**Plant Construction.**  
**PITTSBURGH, U. S. A.**

Blast Furnaces and Steel Works designed and erected complete in every detail ready for operation. Special attention given to the manufacture of

**HEINE**  
**Safety Water Tube Boilers.**

Owning an extensive manufacturing plant, I can guarantee promptness in execution, and satisfaction in any contracts undertaken by me.

**Gordon, Strobel & Laureau,**  
(LIMITED),  
ENGINEERS AND CONSTRUCTORS,  
PHILADELPHIA, PA.  
**BLAST FURNACES,  
STEEL PLANTS,  
FIRE-BRICK STOVES,  
BLOWING ENGINES.**

We are sole manufacturers of the Gordon-Whitwell-Cowper Fire-Brick Hot-Blast Stove, and within four years have introduced them as follows:

Jefferson Iron Works, Ohio.....	4
North Chicago Rolling Mill Co., Ill.....	4
Joliet Iron & Steel Co., Ill.....	4
Missouri Furnace Co., Mo.....	2
Jupiter Furnace Co., Mo.....	3
Western Steel Co., Mo.....	3
Tenn. Coal, Iron & R. R. Co., Ala. and Tenn.....	21
Cleveland Rolling Mill Co., Ohio.....	4
Belmont Nail Co., W. Va.....	3
Sloss Iron & Steel Co., Ala.....	9
Sheffield & Birmingham Coal, Iron & R. R. Co.....	9
Southern Iron Co., Tenn.....	6
Decatur Land, Iron & Furnace Co., Ala.....	2
N. Y. & Perry Coal & Iron Co., Ohio.....	2
Princess Furnace, W. Va.....	4
Irontide Furnace, Ohio.....	2
Cornwall Anthracite Furnaces, Pa.....	2
Duluth Iron & Steel Co., Minn.....	3
Geo. P. Whittaker Co., Md.....	2
Phila. & Reading Coal & Iron Co., Emans, Pa.....	3
Burden Iron Co., Troy, N. Y.....	3
Junction Iron Co., Ohio.....	4
Lawrence Furnace Co., Ohio.....	2
Piedmont Land & Improvement Co., Ala.....	2
Total.....	103

**ALCOTT'S IMPROVED TURBINE**  
STRONG,  
DURABLE,  
ECONOMICAL,  
SIMPLE.  
**WATER WHEEL**  
T. Alcott  
& Son, MFRS. MOUNT HOLY N.J.

**HUGHES STEAM PUMP CO.**  
CLEVELAND, O.

MANUFACTURERS OF  
Single, Duplex and Compound Pumps  
FOR ALL DUTIES.  
WATER WORKS PUMPING ENGINE.  
SEND FOR CATALOGUE AND PRICE LIST,  
Densan & Swift, New York Agents.  
T. R. WINGROVE, 324 NORTH ST.  
BALTIMORE AGENT.

**DON'T BUY AN  
ENGINE  
OR  
BOILER**

Until you have seen our circulars. Engines complete from 5 to 110 horse power, both Vertical and Horizontal, at prices below those of other reputable makers. 1600 in use. Boilers of every style. Automatic Engines for Electric Lights. Centrifugal Pumping Machinery for Drainage or Irrigation. Established as years. Perfect satisfaction guaranteed. Ask for Circular M and address

**Morris Machine Works,**  
BALDWINVILLE, N. Y.

THE GREAT IMPROVEMENT IN  
**ROOFING.**

We are now ready to supply the product of entirely new machinery and processes just completed by which we not only have greatly improved the strength and durability of our well-known **ASBESTOS ROOFING**, but have also secured a degree of uniformity never before attained in any similar fabric. We offer this as the PERFECTED form of the portable Roofing which we have manufactured with continued improvements during the past thirty years, and as the most desirable Roofing for general purposes.  
The important features of our recent improvements, for which patents have been allowed in this country and in Europe, are described in our new circular, which, with samples, will be sent free by mail.  
Our Asbestos Roofing is now in use upon Factories, Foundries, Cotton Gins, Railroad Bridges, Cars, Steamboats, etc., in all parts of the world.  
It is supplied ready for use, in rolls of 200 square feet, and weighs with Asbestos Roof Coating, ready for shipment, about 85 pounds to 100 square feet.  
It is adapted for steep or flat roofs in all climates, and can be readily applied by unskilled workmen.  
There are inferior imitations of our Asbestos Roofing, purchasers are cautioned.

Samples and Descriptive Price List free by mail.  
**H. W. JOHNS MANUFACTURING COMPANY,**  
SOLE MANUFACTURERS OF  
H. W. Johns' Liquid Paints,  
Fire-Proof Paints, Building Felt,  
Steam-Pipe and Boiler Coverings,  
Asbestos Steam Packings, Gaskets, etc.  
Vulcanized Moulded Rings, Washers, etc.  
**87 MAIDEN LANE NEW YORK.**

Established 1867.  
**E. HARRINGTON, SON & CO**  
Works and Office,  
N. 15 St. & Penna. Ave., Phila., Pa.  
Manufacturers of a full line of

**Iron Working Machinery,**  
INCLUDING  
Extension and Gap Lathes, Planers with Quick Return, Drills, &c., Hand Power Elevators with Patent Brake, Double Chain Screw Hoists, Overhead Tramway with Switch, Turntable and Geared Truck.  
Gear Cutting a Specialty. Send for Estimates.  
J. Q. MAYNARD, 15 Cortlandt St., New York.  
C. E. KIMBALL, 93 Oliver Street, Boston, Mass.  
W. BUCHNER, 122 Main St., Cincinnati, Ohio.

**SUCCESS**  
**Water Wheel.**  
This Wheel is strong and durable. Excelled all other wheels in the great trial tests. Is in use all over the nation. I also make a specialty of **HEAVY GEARING & MACHINERY**  
For Paper, Cotton and Grist Mills.  
**S. MORGAN SMITH, York, Pa.**

**THE IMPROVED LANCASTER**  
**Turbine Wheel.**  
Write for Descriptive Catalogue.

**Lancaster Turbine Wheel Co. Lancaster, Pa.**  
**Rome Foundry & Machine Works,**  
**ROME, GA.**  
Manufacturers of the well known  
**DAVIS DOUBLE TURBINE**  
**Water Wheel**  
Beyond all question one of the best Wheels on the market, and is fully guaranteed.  
Send for Illustrated Catalogue and Price List.

**Portable & Stationary Engines**  
**AND BOILERS.**  
**Grist and Flouring Mill Machinery.**

**The Balanced Gate Turbine.**  
PAT. SEPT. 3, 1889.  
High Percentage,  
Great Simplicity,  
CLOSE FITTING  
AND  
EASY WORKING GATE  
Under all Circumstances.  
Sold under Full Guarantee at Low Prices.  
Send for Descriptive Pamphlet.  
**CHRISTIANA MACHINE CO., Christiana, Pa.**  
Makers of all kinds of Machinery for Transmitting Power. Perfect Goods Only.



## A Splendid Opportunity I HAVE FOR SALE

—THE—

## HUCKABEE Mineral Tract,

Embracing 4,000 Acres in One Body.

Lying on Little Cahaba River, near  
Brierfield, Bibb County, Ala.

Ore, marble and limestone of best quality and inexhaustible quantity and the finest timber are found on these lands, and there is manganese in workable deposits. Coal is abundant, railroad facilities ample, and the proximity to rich cotton lands justifies a cotton factory, thus affording everything necessary to establish a successful industrial town.

Mr. Robert L. McCalley, a well-known mineralogist, writes of these lands as follows: "There is no other place in Alabama where iron ore, coal, marble, limestone, timber and sand are in such proximity and abundance. Besides every material necessary for the manufacture of iron, magnificent water power is furnished by the Little Cahaba River. This will be very valuable in sawing and quarrying the stone, and a fine marble business can be established and successfully operated. The fragments of the stone can be used as flux at Bessemer, 23 miles north, Birmingham, 32 miles north, and Brierfield Furnace, 3 miles east. Within one mile from the Huckabee lands are veins three to eight feet thick, producing the best fuel and coking coal in Alabama."

Within a few miles there are six lines of railroad, the nearest being the Brierfield Standard Gauge Railroad, two miles distant, and the L. & N. branch at Blocton, three miles distant.

This tract is in a healthy locality.  
I offer it for

**\$20 an Acre, Cash.**

For further information, address

**S. F. NUNNELEE, Agent,**  
ANNISTON, ALA.

## HARRIMAN, TENNESSEE.

OFFERS TO MANUFACTURERS.

Free Sites. Belt Railroad Facilities.  
Abundant Water Supply, Cheap  
Coal, Cheap Iron, Cheap Labor,  
Home Markets.

Magnificent Iron and Timber Resources, inexhaustible  
Beds of Coal, Excellent Transportation Facilities  
Both by Rail and Water.

Harriman, Tenn., is located at the junction of the East Tennessee, Virginia & Georgia Railway system with the Queen & Crescent system, at the point where the Emory river breaks through Warden's Ridge. This gap is a

NATURAL GATEWAY OF TRAVEL.

As a distributing point and as a favorable situation for manufacturers, Harriman is not equalled by any new city in the South, and is excelled by no old city. Harriman is being built by the

EAST TENNESSEE LAND COMPANY.

Officers—Thomas L. James, president; John Hopewell, Jr., first vice-president; Frederick Gates, second vice-president; A. A. Hopkins, secretary; A. W. Wagnalls, treasurer; W. C. Harriman, managing director; W. H. Russell, general manager.

Directors—Thomas L. James, New York City; A. W. Wagnalls, New York City; F. Schumacher, Akron, O.; Francis W. Breed, Lynn, Mass.; Frederick Gates, Harriman, Tenn.; I. K. Funk, New York City; A. A. Hopkins, Rochester, N. Y.; John Hopewell, Jr., Boston, Mass.; J. R. Leeson, Boston, Mass.; W. C. Harriman, Harriman, Tenn.; J. B. Hobbs, Chicago, Ill.; Wm. Silverwood, Baltimore, Md.; E. M. Goodall, Sanford, Me.

For information address W. H. RUSSELL,  
General Manager, Harriman, Tenn.

## West Salem Land Co.

SALEM, VA.

Authorized Capital, \$500,000

OFFER STOCK IN

Series C, New Castle Series.

**SHARES \$10**

PAR VALUE.

ARE SOLD TO SUBSCRIBERS AT \$5.

Payable, One Dollar When Subscription is Made, and One Dollar Each June 1, July 1, August 1 and September 1; at which time Certificates of Stock will be issued, declared Fully Paid up and Non-assessable.

The town of New Castle (or Craig City) is the county seat of Craig county, Va., and lies midway between the Chesapeake & Ohio Railroad at Eagle Rock, and the Norfolk & Western at Salem, Va. A branch of the Chesapeake & Ohio Railroad is now being built to New Castle, which will be completed about Sept. 1, 1890. This road will open up the richest mineral region of Virginia, and cause great development of resources and consequent enhancement of values.

The property belonging to this series will be divided into about 600 business and residence lots, and will be sold for the benefit of the stockholders. Applicants for stock in series C will please remit \$1 per share to the West Salem Land Company at Salem, Va.

GEORGE ALLEN, President.  
C. C. TOMPKINS, Secretary.

BOUDE, PENDLETON, MEEM & CO.  
Real Estate,  
Stocks and Insurance,  
Glasgow and Buena Vista, Va.

R. K. WRIGHT, JR.  
Real Estate and Insurance

GRAHAM, Tazewell Co., VA.

REPRESENTING

Graham Land & Improvement  
Co. and Niagara Fire Insurance Co. of N. Y.

To Those Looking For  
**MANUFACTURING SITES**  
IN THE SOUTH

The most desirable locations in the South for manufacturing wagons, stoves, agricultural implements, furniture, or for foundries, machine shops, rolling mills, muck bar mills, nail works, glass works, cotton or woolen mills, and tanneries, are to be found in Virginia along the line of the Norfolk & Western Railroad from Norfolk to Bristol, and upon its branch lines. Hard wood of every variety; pig iron from the furnaces at Lynchburg (2), Roanoke (2 in operation and 1 now under construction), Pulaski (1), Ivanhoe (1), Radford (1, to be built in 1890), Salem, Graham Max Meadows and Bristol (1 at each point now under construction), bar iron from the rolling mills at Roanoke, Lynchburg and Richlands (1 to be built in 1890); coke and semi-bituminous coal from the Pocahontas Flat Top field; superior gas coals from the mines on the Clinch Valley Extension; glass sand from Tazewell county; cotton from the markets of the Southern States, and wool from all the Western and Southwestern States and Territories at advantageous freight rates. Favorable freight rates made upon raw materials to all factories established upon its line, as well as to points in the United States and Territories upon the manufactured articles.

Those seeking new fields for manufacturing establishments should not fail to investigate the wonderful development of iron, coal and coke industries that has been made within the past five years along the line of the Norfolk & Western Railroad, and the advantages offered by the State of Virginia in the supply of cheap raw materials; by the Norfolk & Western Railroad in the matter of freight facilities and rates upon raw materials and for reaching home, far distant and foreign markets, and by the cities and towns along its line in the way of advantageous sites at moderate cost. Many of the cities and towns exempt manufacturing establishments from taxation for a series of years.

For further information as to freight rates and sources of supply of raw materials, apply to A. Pope, General Freight Agent, Roanoke, Va., or to

**CHAS. G. EDDY,**

Vice-President, Roanoke, Va.

## CHERAW, S. C.

Has a population of between 1,500 and 1,500, constantly increasing; one of the healthiest and most beautiful towns in the State; on the great Pee Dee; excellent water power all around it; fine schools; churches of every denomination; literary lyceum and library; eligible town lots; fine timber lands near it; railroads from commercial centers; a delightful place to live. For particulars, address the Intendant.

## London & New York Land Co.

Will give to a reliable furniture factory, hub and wheel factory or wagon factory that will employ large number of skilled mechanics

**25 ACRES OF GOOD LAND,**  
Lying right in the heart of the town of Jellico, Tenn., and worth \$10,000,

and will also give monetary inducement and sufficient land to good, reliable men who wish to establish manufactories of any kind. Fuel and steam coal for almost nothing, and will soon have finest of water power. Timbers of all kinds and in abundance and of magnificent proportions. End of the divisions of two great railroads, viz, East Tennessee, Virginia & Georgia and Louisiana & Nashville. Address for further particulars

W. S. DOWNTON Secretary, Jellico, Tenn.

**THE ASPHALTIC SLAC ROOFING**  
IS GUARANTEED TO OUTWEAR  
**IRON, STEEL, TIN OR ANY OTHER**  
**KNOWN ROOFING**  
**AND AT LESS COST.**

Not affected by atmospheric changes. Water, fire, acid and alkali proof. Always ready for use. Odorless.

Does not require an army of workmen to lay, or result in smearing everything with coal tar, but is expeditiously and neatly laid. The slag is (residue of precious metals) thoroughly embedded in the surface Asphaltum, and rolled into and upon the cloth surface, making it one indestructible body. Water resisting Asphalt lies and is held between the cloth and the base paper board, used as a non-conductor. Ornamental colors if desired. Weight, 117 lbs. to the square.

The Asphaltic Slag Paving & Roofing Co.  
GEN. FITZ JOHN PORTER, Pres.  
45 Broadway, NEW YORK CITY,  
Agents Wanted. Works, Newark, N. J.

**LOUISVILLE,  
New Orleans & Texas**  
**RAILWAY.**

(MISSISSIPPI VALLEY ROUTE.)

**THE POPULAR LINE**

BETWEEN

**MEMPHIS, GREENVILLE,  
VICKSBURG, BATON ROUGE,  
NEW ORLEANS.**

Traversing a Magnificent and Even  
Picturesque Country.

The rice and sugar plantations and great massive sugar houses and refineries south of Baton Rouge are especially interesting, and never fail to please the observant passenger.

Between Memphis and Vicksburg the line passes through some of the finest cotton plantations in the Yazoo-Mississippi Delta, the most fertile agricultural section of country on earth.

The equipment and physical condition of the line are first-class in every particular, permitting a high rate of speed and insuring the comfort and safety of passengers.

**TOURISTS' TICKETS** at reduced round-trip rates are on sale at ticket offices to different points in Southern Texas, California and Mexico. Magnificent Pullman Buffet Sleeping Cars run between Cincinnati and New Orleans via Louisville and Memphis without change.

Passengers should purchase tickets via this line, it is emphatically the most attractive route in the South to-day.

For time-table, map, folders and price of tickets address RUSH H. BARNES, General Agent Passenger Department, 204 South Clark Street, Chicago; R. E. MAURY, JR., General Traveling Passenger Agent, Memphis, Tenn.; P. R. ROGERS, Assistant General Passenger Agent; E. W. HOW, General Passenger Agent.

If you are not already a subscriber to the MANUFACTURERS' RECORD, send us \$3 and you will receive it regularly for one year or six months for \$2.00.

# The Gem of the Mountains

## TACOMA,

Wise County, Virginia.

Situated Directly in the Center of the Beautiful Guests River Valley on the Line of the Clinch Valley Extension of the Norfolk & Western Railroad, midway between St. Paul on the East and Big Stone Gap on the West.

Four large veins of coal at its doors including the famous Imboden vein of superior coking coal eight feet thick.

3,000,000 brick contracted for.

Works being constructed. Streets being graded.

470 lots already sold.

The gateway to the growing Southwest.

A substantial and enduring city to be reared.

A number of industries secured. Manufacturing sites free.

**W. E. HARRIS, President,**

Big Stone Gap, Va.

**HARRIS & HARRIS, Special Agents,**

Tacoma, Va.

## BIG STONE GAP, VA.

*"Nature has done for Big Stone Gap what Art, Aided by Millions, can do for no other City."*

**EIGHT LAND, COAL, IRON and DEVELOPMENT COMPANIES,** whose capital aggregates millions of dollars, are aiding the railroads to develop this wonderfully rich Mineral, Coal and Timber Region, and to build here

## A MIGHTY CITY.

### LOCATION.

High, healthful, beautiful. Drainage perfect. Confluence of two swift-falling rivers.

### NATURAL ADVANTAGES.

The point in all the world where inexhaustible **COKE, IRON ORE, LIME-STONE and WATER**, of best quality, are closest together and easiest got, and where consequently **Iron and Steel** can be most cheaply made.

### TRANSPORTATION FACILITIES.

A natural pass-way at water-level in a great chain of mountains, it is of necessity the focal point for Railroads connecting the West with the seaboard, and the markets of the Northwest with the rich coal and iron fields of the Southeast. **FOUR RAILROADS**, one completed and three to be completed during the year. **FIVE MORE RAILROADS** being constructed, with Big Stone Gap as the ultimate terminus.

### DIVERSITY OF INDUSTRIES.

Easily secured. The **HEART** of the finest **COAL, IRON and TIMBER BELT** on the Continent. Marble, Building Stone, Building Brick, Fire Brick, Lime, Mineral Paints, Tanneries, Potteries, etc., etc.

### There are in Course of Construction at Big Stone Gap

Two one hundred-ton Iron Furnaces.  
An Electric Light and Power Plant by the Thomson-Houston Co., equal to any in the South.  
A Hotel second only to the Ponce De Leon.  
A Street Railway three miles long operated by steam.  
A Belt Line for manufacturing enterprises six miles long to be extended to eighteen.  
Two complete Lumber and Finishing plants.  
A complete all the year round Brick Plant  
A complete Telephone Exchange.  
A complete Steam Laundry.  
A Furniture Factory.  
A Terra Cotta and Sewer Pipe Company.  
A Union Depot which will equal any in the South.  
A Coke Plant modeled after the celebrated Connellsville plant building by the Virginia Coal & Iron Co., of which E. B. Leisenring (late president of the Connellsville Coal & Iron Co.) is president.  
This company will build coke ovens to meet any demand which may be made upon them.

**GRAND OPPORTUNITIES OFFERED** to Investors, Capitalists, Manufacturers, Mechanics, Laborers, Pleasure Seekers and Home Seekers.

FOR INFORMATION IN DETAIL ADDRESS

**BIG STONE GAP IMPROVEMENT CO. or Real Estate Exchange.**



**Dauntless Shingle Machine.**

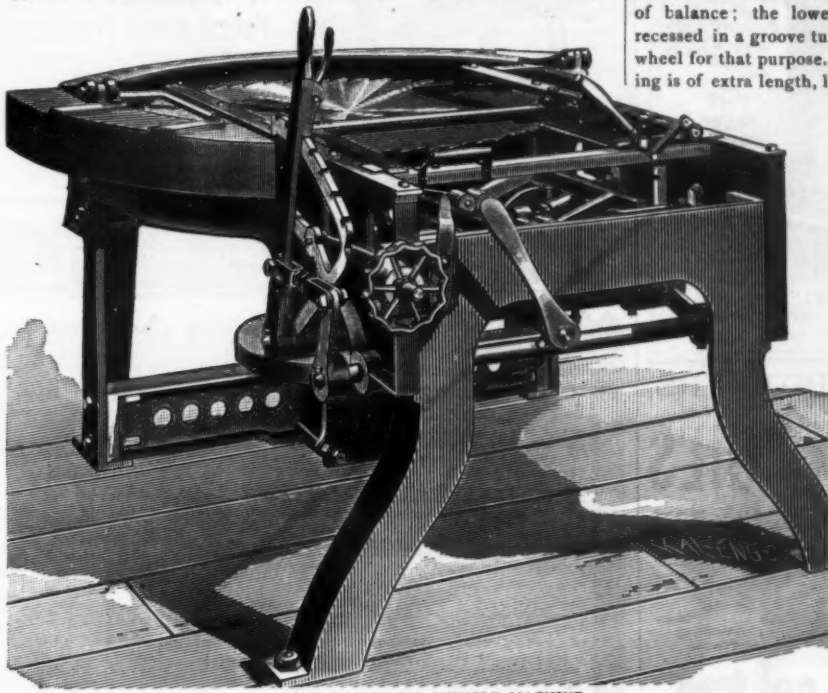
The following advantages are claimed for the Dauntless shingle machine, made by Wm. B. Hill & Co., Kalamazoo, Mich. An illustration of this machine is shown on this page:

As the carriage is worked by hand, the sawyer has complete control over the feed,

braced. The carriage is very light and strong, made of forged cast steel saw plate, running on steel ways or tracks, and will take in a block 18 inches wide and 19 inches long, adjustable for 16-inch or 18-inch shingles.

The tilt ways or set works are adjustable for butt or point at either end by one screw. When adjusting the gauge of butt or point

The saw arbor is made of 2½-inch steel; the balance wheel and driving pulley are heavy, turned inside and out and properly balanced, so that the machine can be run at high speed with the least possible jar or vibration. The driving pulley is 12 inches diameter, 11 inches face, made with a solid web on the upper end to exclude any dirt or refuse which would tend to throw it out of balance; the lower end of pulley is recessed in a groove turned in the balance wheel for that purpose. The upper bearing is of extra length, lined with best qual-



THE DAUNTLESS SHINGLE MACHINE.

which he regulates according to the quality of the timber he is sawing, and as he only shoves far enough to cut through the block, can make more cuts in the same length of time than any of the self-acting machines. If the saw is properly filed it will almost feed itself, thus making very easy work for

at one end of block you do not interfere with the butt or point at the other end of the block. To make the shingle thinner or thicker throughout turn the hand wheel conveniently placed at the left hand corner of the machine either to the right or left as may be desired.

ity "phosphor-bronze;" the lower bearing is brass, also extra long.

The step-box is an improvement over many others, will hold about three quarts of oil, and it is practically impossible for it to get hot if supplied with oil. Both bearings are oiled through pipes running from

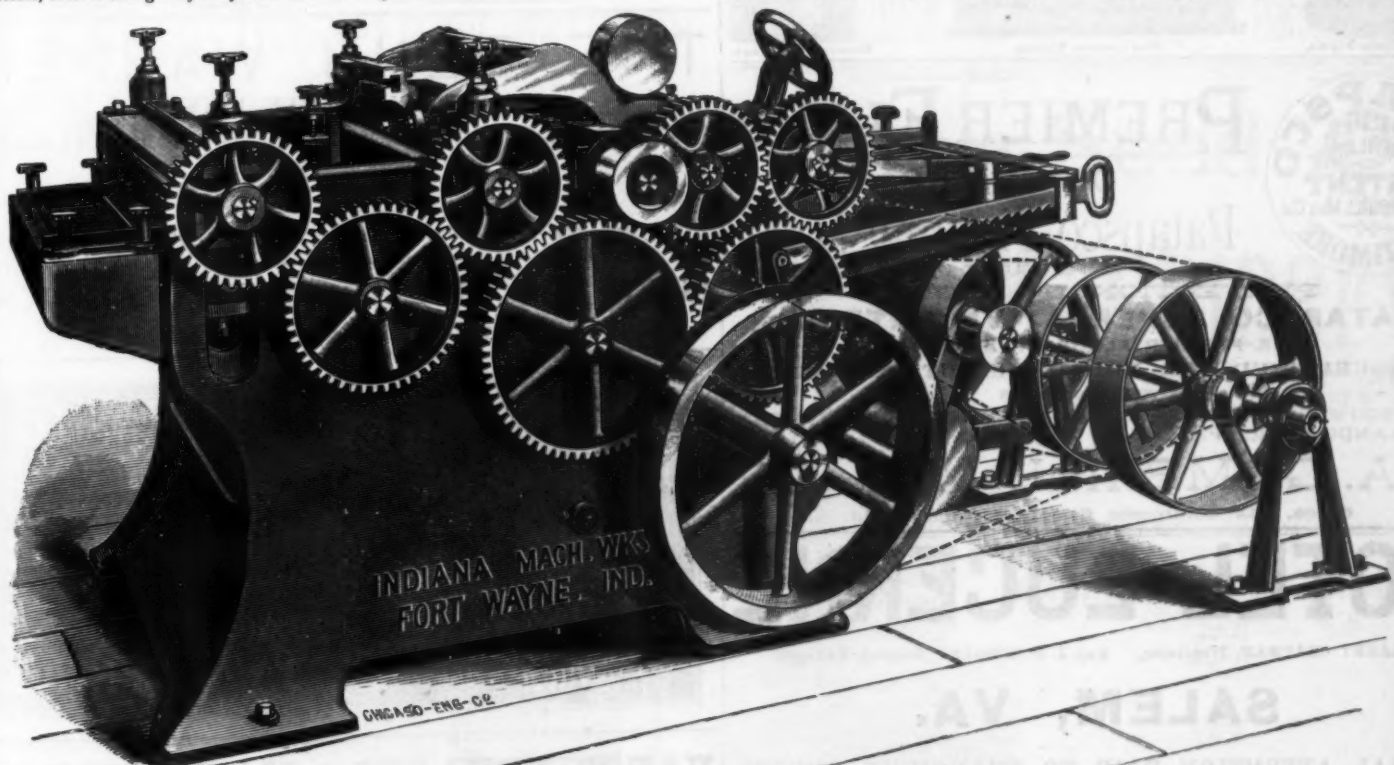
**A New Planer, Matcher and Molder.**

We present herewith a correct representation of the latest achievement of the Indiana Machine Works, of Fort Wayne, Ind.—No. 2 Clipper planer, matcher and molder, an elegant design, intended to supply the demand for a somewhat heavier machine than the widely-known Clipper No. 1. The frame is cast in one piece and very wide at the base, thus securing great strength and rigidity; the bed is very long and cast in one piece, and is fitted into the frame between long, heavy guides, which are provided with steel gibs and adjusting screws on the front end of the frame, so that any wear may be taken up and a perfect fitting retained at all times; the entire bed, with matcher heads, may be easily raised or lowered by the use of the hand, shown in the cut, and the indicator, which is in a very convenient position, shows at a glance the exact thickness to which the machine is set.

Particular attention is directed to the adjustment of the matcher heads, both heads and the long guide may be moved across the bed simultaneously and without affecting the space between them; one head may also be adjusted independent of the other; these adjustments are accomplished either from front or feeding in the end or the side of the machine next to the matcher heads, whichever happens most convenient for the operator; both pressure bars are adjustable to and from the cylinder, allowing molding cutters to swing clear.

The manufacturers enumerate the remaining prominent features as follows:

- 1st. The cylinder is forged from high-grade crucible steel, four-sided, slotted on two sides and belted at both ends.
- 2d. Each machine is provided with their improved self-oiling cup, which positively prevents the burning out of boxes.
- 3d. It has six large feed rolls, all driven.
- 4th. The gearing throughout is cut.



A NEW PLANER, MATCHER AND MOLDER.

the sawyer. The timber is "dogged" very close to the saw, by this means reducing the waste to the smallest possible amount, and rendering a spalt machine unnecessary. In making shingles from sawn cants, slabs, ends of boards, etc., the first cut is a perfect shingle.

The frame is of iron throughout, very heavy and rigid, strongly bolted and

The entire set works are made to lower and raise instantly by means of a hand lever and quadrant on left hand side of machine, so that a thick or thin slab or part of block containing sap-wood, rot or other imperfections may be taken off at one clip. This drop varies from a half inch to four inches as the sawyer deems advisable

the outside of frame.

Each machine is fitted with two 40-inch saws and flanges, which are held in place by three heavy machine screws. By this arrangement one saw can be taken off and replaced with the other in less than three minutes.

The machine is shipped on skids all ready to run, except putting on the saw.

5th. It contains superior appliances for quick and perfect adjustment.

6th. It planes 25 inches wide and 7 inches thick. Like every machine that leaves the shop of this company, it is thoroughly tested.

The manufacturers will be pleased to answer all inquiries and mail catalogues to all who may be interested.

## HARTMAN'S PATENT INSIDE SLIDING WINDOW BLIND

Is the most popular Blind in America. Architects and builders prefer it to any other for merit, style, convenience and economy. Not complicated. The only Blind that is furnished with an automatic Burglar Proof Lock, free of charge. This is an item of immense magnitude, and may save you many times the cost of blinds and perhaps life also, and the only blind that gives entire satisfaction. Thousands in use. Agents wanted everywhere. Send for illustrated catalogue and prices. Manufactured by **HARTMAN & DURSTINE**, No. 5 Beaver St., WOOSTER, OHIO.



"Auburn" Watchman's Clock.

The best in the market, and the only one combining a system of fire and superintendent's alarm. The most complete safeguard ever invented. No factory can afford to be without it.

SEND FOR CIRCULARS TO

**BUNDY MANUFACTURING CO.**

BINGHAMTON, N. Y.

## WILLER'S SLIDING BLINDS

SUPERIOR TO ALL OTHERS.

Agents Wanted Everywhere



**WILLIAM WILLER**  
SOLE MANUFACTURER—FOURTH & CEDAR STS.  
MILWAUKEE, WIS.

**OLNEY BROTHERS,**  
N. E. Agents for

Binghamton Cylinder & Spindle

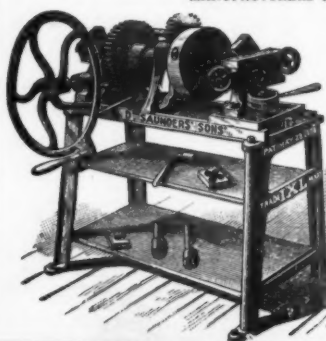
AND DEALERS IN  
Sperm, Lard, German,  
Spindle and Wool

**OILS**

140 CONGRESS ST., BOSTON, MASS.

## D. SAUNDERS' SONS,

MANUFACTURERS OF THE ORIGINAL



TRADE **I.X.L.** MARK.

Pipe Cutting and Threading Machine.

BEWARE OF IMITATIONS.

None genuine without our Trade Mark and name. Also

**Patent Wheel Pipe Cutter**

STEAM AND GAS FITTERS' HAND TOOLS,

Pipe Cutting and Threading Machine

FOR PIPE MILL USE A SPECIALTY.

Send for Catalogue B.

**YONKERS, N. Y.**

THE EXCLUSIVE USE OF THIS FENCE FOR ADVERTISING PURPOSES HAS BEEN SOLD TO **PANCOAST & MAULE, PHILADELPHIA, PA.** ANY ONE CAUGHT DEFACING THIS SIGN WILL BE PROSECUTED.

FOR SALE ON THE PREMISES DAILY UNTIL FURTHER NOTICE.

The "American" Union.

A fitting which requires no packing to make a permanent joint.

The "American" Longscrew.

which possesses similar advantages to the AMERICAN UNION.

**Malleable Iron and Polished Brass**

Fittings of all kinds, for building Pipe Railings, also Awning Frame Fittings.

**Ornamental Pipe Coil Fittings,**

for constructing Ornamental Heating Coils of 1 and 1 1/4 inch Wrought Iron Pipe.

**"Eclipse" Pipe-Cutting Machines,**

built in six different sizes for use by hand or power.

**Improved Steam Glue Heaters.**

Made in nineteen sizes, with copper, plain, or enameled iron pots.

For Price Lists of any of the above, please address,

**PANCOAST & MAULE,**  
PHILADELPHIA, PA.

OUR CATALOGUE "A"

Contains upwards of 500 Cuts, and will be found of service to Pipe Fitters, Engineers, Superintendents of Railroads, Mills, Factories, Water, Ice, Oil, and Gas Companies, and all who are interested in the use of Steam, Water, and Gas, and is an exhaustive book of reference for the selection of such goods.

In writing us for Catalogue, please send your business card or other evidence that you have actual use for such a book. We make this request for the reason that we constantly receive applications from parties who have no use for goods in our line, but who simply write for Catalogue from the desire to get "something" for nothing.

**PANCOAST & MAULE,**  
243-245 South Third Street,  
PHILADELPHIA.

THE **FRED. J. MEYERS MFG. CO.**  
COVINGTON, KY., Manufacturers of  
**WIRE GOODS OF ALL KINDS,**  
Wrought-Iron Fencing, Cresting and Hardware Specialties.  
Send for Illustrated Catalogue and Price List.



**PREMIER FLOUR**  
OF AMERICA.

Patapsco Flouring Mills.

ESTABLISHED 1774.

PERFECTION IN FLOUR.

**PATAPSCO SUPERLATIVE PATENT,**

THE PREMIER FLOUR OF AMERICA,

IS UNSURPASSED FOR BREAD, BISCUIT OR PASTRY.

ASK YOUR GROCER FOR

PATAPSCO SUPERLATIVE PATENT,

ROLANDO CHOICE PATENT,

PATAPSCO FAMILY PATENT,

ORANGE GROVE EXTRA.

**C. A. GAMBRILL MFG. CO**

Office, 214 Commerce Street, Baltimore, Md.

**HOTEL LUCERNE**

J. HARRY CHAPMAN, Proprietor, Maj. J. P. LONGLEY, General Manager.

**SALEM, VA.**

SPECIAL ATTENTION PAID TO TRANSIENT GUESTS.

ACCOMMODATIONS FIRST-CLASS.

Fine Sample Rooms for Drummers.

rates Reasonable.

**Mineral Lands, City Lots,**

GRASS, GRAIN AND FRUIT FARMS FOR SALE.

ADDRESS

**F. J. CHAPMAN, - - Salem, Va.**

**THE DENN WARP**

WITH NEW DOUBLE LINKER,

Makes the BEST WARP in use.

SEND FOR CUTS AND PRICES.

Single Linkers Altered to Double Linkers.

**GLOBE MACHINE WORKS,**  
FRANKFORD, PA.



**VAN WINKLE GIN & MACHINERY CO.**

ATLANTA, GA., and DALLAS, TEX.

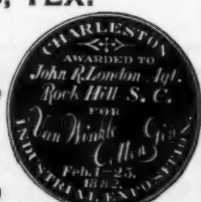
MANUFACTURERS OF

**COTTON GINS, FEEDERS,**

CONDENSERS AND PRESSES,

**COTTON-SEED OIL MILLS,**

SHAFTING, PULLEYS, WIND MILLS, TANKS, PUMPS, Etc.





STODDARD, LOVERING & CO., 152 Congress Street, Boston, Mass., Sole Agen's for DOBSON & BARLOW'S COTTON MACHINERY.



### Clark's Patent Rubber Rolls

For Wool Scouring Machines, Warp, Yarn and Skein Dyeing Machines and Bleachery Use, etc. Also Complete Power Wringers, all styles. Only Rubber Roll that will withstand heavy pressure. Catalogue of rolls free.

GEO. P. CLARK, Box C, Windsor Locks, Ct.

By writing to C. R. ENGLISH, 216 Purchase Street, Boston, Mass., you can obtain

## CARD CLOTHING

of guaranteed quality at **LOWEST PRICES.**

REFERENCES TO NUMEROUS SOUTHERN MILLS NOW USING IT.



### HAVE YOU USED

ANY OF OUR

## DOBBIES

FOR Weaving Fancy Goods.

THEY ARE BEST MACHINES IN EXISTENCE.

Let us put in a sample machine. We have no fear of the result. Address us for prices and description.

SCHAUM & UHLINGER,

SUCCESSORS TO W. P. UHLINGER,

Glenwood Avenue and Second Street,

PHILADELPHIA, PA.

## The BEST COTTON-SEED OIL PRESS IN THE MARKET

Boxes Made Entirely of Steel.

CAPACITY:

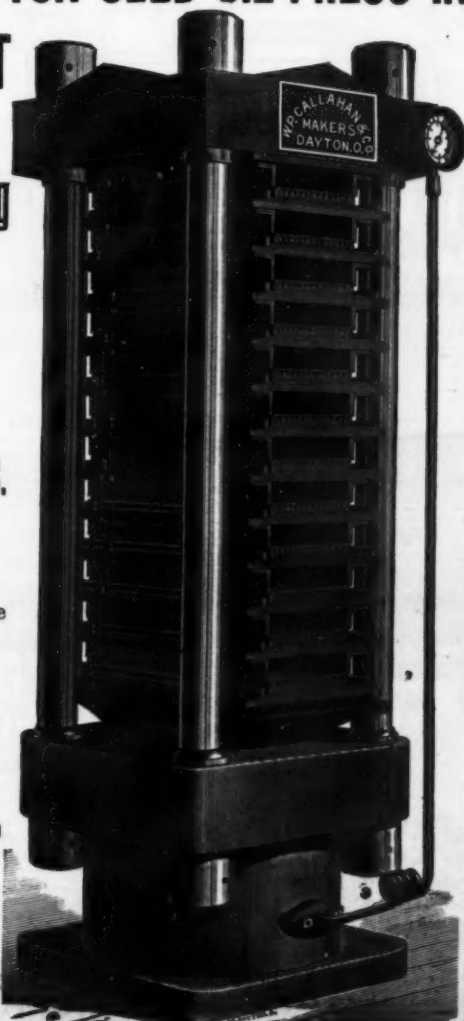
12 Tons in 24 Hours.

Parties contemplating the erection of Cotton-Seed Mills should address

W. P. Callahan & Co.

DAYTON,

OHIO.



THADDEUS S. COBB & CO.  
MANUFACTURERS' AGENTS AND DEALERS IN  
**MACHINERY** OF EVERY DESCRIPTION.  
36 Central Street, Lowell, Mass.

## NYE & TREDICK

MANUFACTURERS OF

Automatic Circular Rib

## Knitting Machines

FOR

Plain and Fancy Ribbed Underwear, Skirts, Caps, Jackets, Jerseys, Leggings, &c.

AGENTS FOR THE

## KEYSTONE KNITTER,

FOR

SEAMLESS HOSIERY.

Winders, Loopers, Steam Presses, Hosiery and Shirt Boards, &c.

ADDRESS

NYE & TREDICK, 608 Arch Street, Philadelphia, Pa.

## Cotton-Seed Oil Machinery.

GET THE BEST.

*Presses, Pumps,*

*Cake Formers, Meal Heaters,*

*Chilled Roll Crushers,*

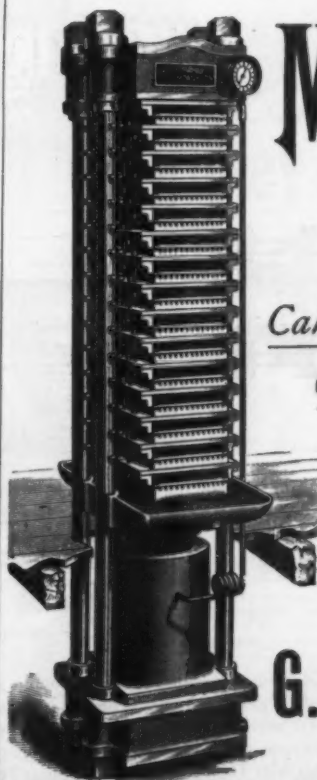
*Etc.*

Send for Cuts and Prices.

THE

G. H. BUSHNELL CO.

THOMPSONVILLE, CONN., U. S. A.



IMPROVED HYDRAULIC PRESS.

Our Oil Presses are fitted with Tiffany Oil Mats, Steel Boxes, Cast Steel Cylinders.

**NONE BETTER.**

### The Bates Improved Corliss Engine.

An illustration of the Bates improved Corliss engine (patented), manufactured and sold by the Bates Machine Co., Joliet, Ill., is shown herewith.

This engine is entirely new in design, and has achieved such results and success

ize the merits it possesses, which are set forth as follows by the manufacturers:

The valves and valve motion of the Bates improved Corliss are its main features. The valves are flat, and are operated from a connection on each end of the valve to the valve stem. This prevents the twisting off of the valves. They are so designed that their motion, after it

der heads, or any accidents that might result from water in the cylinder; the steam valves, being in fact balanced, will wear but slightly, requiring little or no attention, and never to be replaced by new ones. The fact of the valves being balanced reduces the size of the dash pots necessary to close them, and lessens the wear on the hardened steel catches.

perfect regulation. In the construction of the Bates improved Corliss engine certain systematic rules of proportion of one part to another (the whole being proportioned much heavier than usual) have been followed. The great desire of its manufacturers has been to put in their engine the best of material and plenty of it. They have received many letters of commenda-

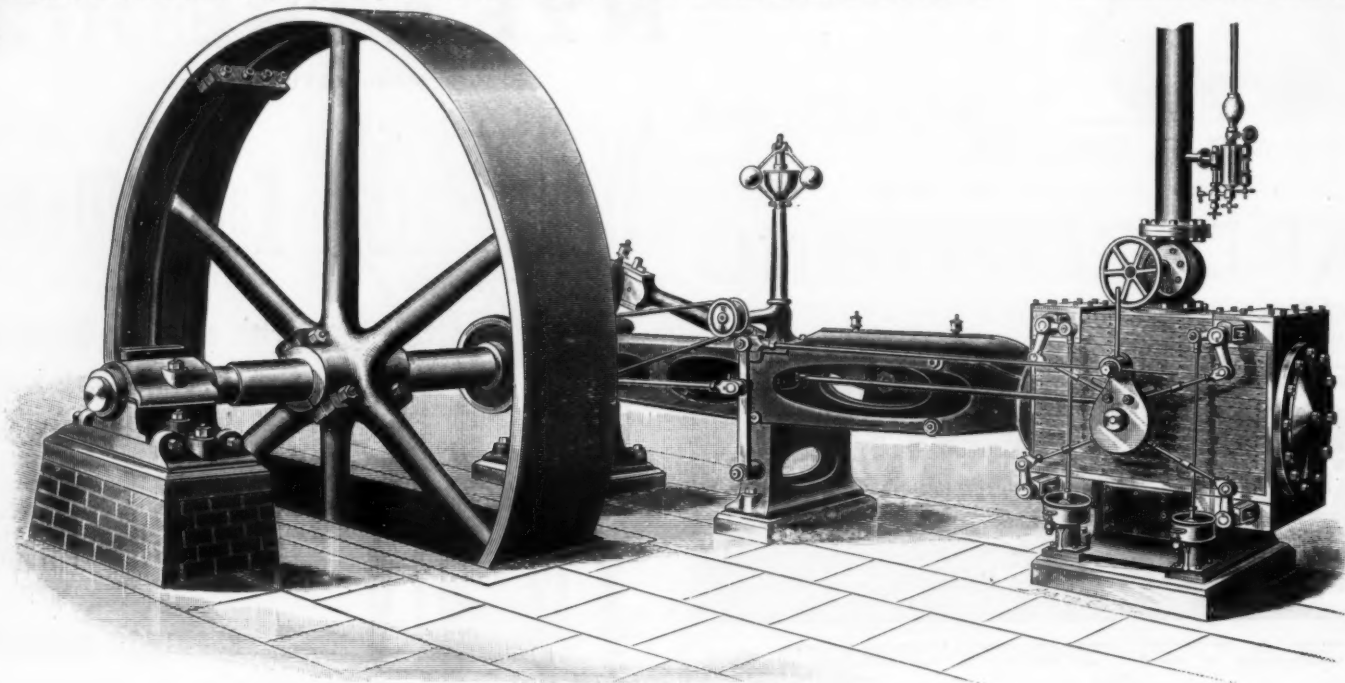


FIG. 1.—THE BATES IMPROVED CORLISS ENGINE.

as to attract the attention of leading engineers throughout the country. When the Bates company determined to begin the building of steam engines they had the whole world before them, and were at liberty to follow in the footsteps of other builders, or give the public that which, though not a proven success, they believed to be far superior to anything ever before put upon the market. They chose the latter, and as a result of their decision are enabled to offer the public an engine which, it is claimed, is in every way highly satisfactory.

The Bates improved Corliss engine is not of a mushroom growth, nor has its perfection been the labor of a day. Years have been spent upon this subject, and imbued with the true spirit of progress, they claim to have retained all that was superior in the rotary valve Corliss, and endeavored to eliminate every known defect, consequently they have produced a class of engine that the company asserts

reaches the edge of port, is only one-half the width of the port, as it takes steam from two sides, and this short motion gives very quick admission. The valves, being flat, always seat themselves perfectly, and in case of wear can be filed and scraped and made as good as new in a few hours, obviating the necessity of reboring the

There are no springs of any kind used in the valve motion. The fact of the valves being tripped at the wrist-plate instead of at the valve stem simplifies the motion and gives more direct regulation.

The governor is of the fly-ball pattern, and is provided with all necessary connections to automatically control the releasing

tion written voluntarily from all over the country relative to its simplicity of construction and unquestionable durability, and their works have been crowded with orders since the first engine was set up eighteen months ago, when they were compelled to double the capacity of their plant.

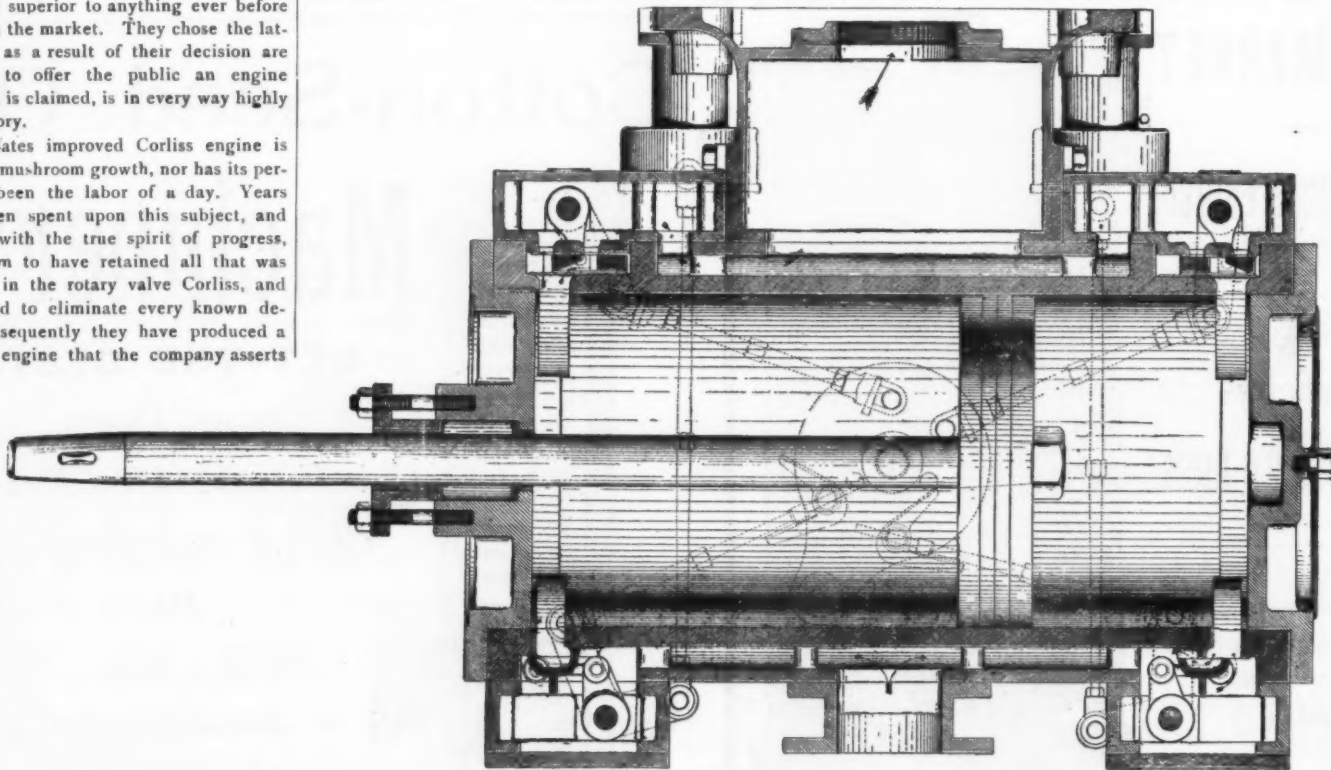


FIG. 2.—SECTIONAL VIEW.

has no successful rival. They might have selected an engine that could have been made cheaper or that would be lighter, but by so doing they would have been compelled to sacrifice the very things they were aiming for, viz., the greatest simplicity, the highest economy and the greatest durability. It does not require a scientific engineer or an expert to readily real-

seats and putting in new valves, which causes much delay and many dollars expense. On account of the design of these valves the cylinder requires no relief valves. The water will compress in the cylinder until the pressure equals that of the steam, when the admission valves will raise and the water escape. This prevents all possibility of accidents from blowing out cylin-

gear; it is also provided with automatic stop motion, but instead of stopping the engine still in case of an accident to the governor belt, it allows it to run and cut off at its earliest point of automatic cut-off.

The regulation is guaranteed to be perfect. This engine is especially adapted for the running of electric railways, where the power varies continuously, owing to its

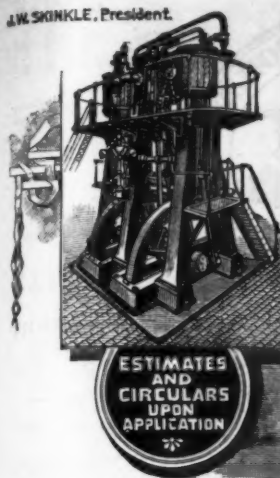
Mr. G. W. TERRELL, of Bedford Springs Va., offers for sale, as may be seen in the advertising columns, a valuable grass and stock farm in Southwest Virginia. It is situated near New London Academy and Bedford Iron Springs, and is convenient to railroads. Mr. Terrell also owns large timber and cotton plantations in Mississippi which he will offer for sale.



J.W. SKINKLE, President.

J. KOENIGSBERG, Secy.

LEO. PASSEUR, Vice Pres.



**THE CONSOLIDATED  
ICE MACHINE CO.**  
MANUFACTURERS OF  
**ICE MAKING  
AND  
REFRIGERATING MACHINERY.**  
BRANCH OFFICES  
NO. 210 EAST 34TH ST.  
NEW YORK  
CITY  
WORKS & PRINCIPAL OFFICES  
WEST 18TH ST. VIADUCT  
**CHICAGO, ILL.**

# 246 MACHINES

IN OPERATION

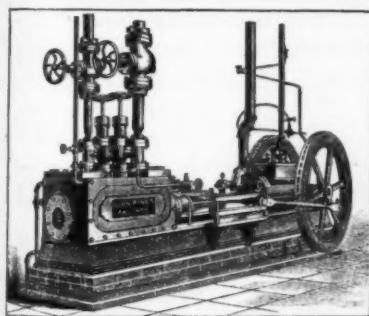
Making Ice—Refrigerating, Breweries, Packing Houses, Cold Storage Houses, Oil Refineries, Creameries, Hotels, &amp;c.

BUY THE BEST AND SAVE MONEY.

All machines built by us are made to gauge and templet. Highest economy secured. Best results obtained. Machines in steady operation for more than ten years.

NO FAILURES.

**SULZER-VOGT MACHINE CO.**  
LOUISVILLE, KY.  
**ICE MACHINES**  
AND REFRIGERATING  
PLANTS  
FOR  
BREWERS  
PACKERS  
AND  
DEALERS.  
PATENTED ABSORPTION SYSTEM  
LATEST IMPROVEMENTS: GREATEST ECONOMY  
WRITE FOR ESTIMATES



FOR  
**Ice-Making and Refrigerating  
MACHINERY,**  
Sizes 5 tons and upwards to 100 tons.  
ADDRESS THE  
Rinz Refrigerating & Ice Machine Co.  
OFFICE:  
218 CHAMBER OF COMMERCE,  
ST. LOUIS, MO.

L. H. BECK, President.

JNO. CAREY, Secy. &amp; Treas.

W. COOK, Superintendent

## ATLANTA MACHINE WORKS,

MANUFACTURERS OF

## The Cook Improved Absorption Ice Machine

Boilers, Tanks, Smoke Stacks, Shafting, Hangers, Pulleys,  
Saw Mills, Mill Gearing.

GOLD MINING AND STONE-WORKING MACHINERY.

ATLANTA, GA.

## Castle Automatic Absorption Ice Machine.

Uses but 210 degrees of heat in the retort, saving all the water for cooling the gas and the weak liquor from 220 degrees down to 210 degrees, and uses none for the absorber. Small machines are complete on heavy-cast foundation plate. Automatic in operation. **Warranted High-Class and Positive.** Hotels, creameries, &c., can make their own ice or refrigerate without additional help. Sizes 500 pounds to 10 tons per 24 hours.

CASTLE ENGINE WORKS, Indianapolis, Ind.

## ICE MACHINE PAINT.

Made expressly for use on all surfaces of either wood or metal coming in contact with water, acids, ammonia, heat or cold. A DURABLE PAINT AT REASONABLE COST.  
METALLIC PAINT for Roofs, Barns, fences and all Exposed Surfaces.  
Write for circulars and prices. Manufactured only by

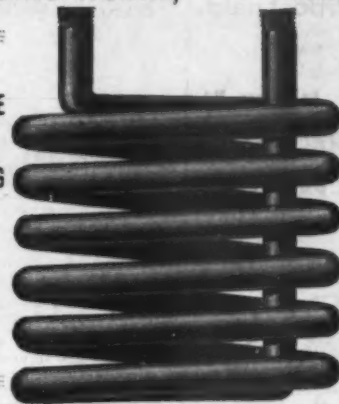
A. F. BOUTON &amp; CO., 118 Gansevoort St., N. Y.

## JAMES D. CARDELL & CO.

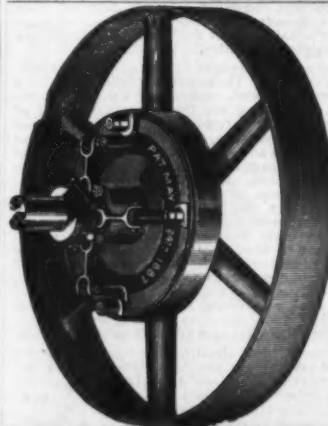
PIPE BENDING WORKS,

Philadelphia, Pa.

Coils of  
WROUGHT IRON PIPE  
for  
ICE and REFRIGERATING  
MACHINES,  
CHEMICAL WORKS,  
SOAP WORKS,  
BLAST FURNACES.



Coils of  
Any Desired Length  
of  
WELDED PIPE.  
PIPE BENDING  
and  
WELDING A SPECIALTY



## The MOORE & WHITE CO

1312 Buttonwood St., PHILADELPHIA, PA.

Friction Clutches, &c.  
Cut-Off Couplings, &c.  
Paper Mill  
Machinery, &c.

## Todd Pulley and Shafting Works

EAST ST. LOUIS, ILL.

MANUFACTURERS OF

Machine Molded Pulleys,  
HANGERS, BOXING, COUPLINGS,  
SHAFTING,  
AND

Standard BOILER FRONTS

Contracts Made for Machinery Castings of all Descriptions.

Write for Prices and Catalogues.

Refer to us Before Buying.

## Menasha Hard Wood Pulleys.



We are sole makers of hardwood bent rim, oak spoke arm Pulleys; gripped to shaft with bolts, and using patent paper bushings. They can be put onto shaft without taking it down or cutting keyseats. No glue or nails used in their construction. Hub with bushing fits any size of shaft.  
Also sole makers of only small Split Pulley 1 inch to 8 inches in diameter, in the market. See above cuts of them. No glue or nails in them. No Keyseats to cut. Also sole makers of only Hickory Hanger in the market; it has iron box. Send for illustrated circulars and discount.



MENASHA WOOD SPLIT PULLEY CO., Menasha, Wis.

BRANCH HOUSES: Hoen & Von Kapf, Baltimore, Md.; A. Van Vechten & Co., 165 Greenwich St., New York; H. N. Bates & Co., Boston; Chas. A. Turner, Pittsburgh, Pa.; Greene & Wood Mfg. Co., Philadelphia, Pa.; W. D. Allen & Co., Chicago and Minneapolis; E. L. Cole, New Orleans, La.; Thos. J. Bell & Co., Cincinnati; L. M. Ramsey Mfg. Co., St. Louis; Will J. Dunn, Atlanta, Ga.

## MINERALS ON THE FARM.

[1890.]

REVISED

## POCKET GEOLOGIST

AND MINERALOGIST,

OR

Sixteen Practical Chapters

- I.—Bottom Facts and Bed Rocks.
- II.—The Coal Measures.
- III.—Oil and Gas.
- IV.—Iron and Manganese Ores.
- V.—Gold and Silver Ores.
- VI.—Copper and Tin Ores.
- VII.—Lead and Zinc Ores.
- VIII.—Nickel, Cobalt and Chrome Ores.
- IX.—Antimony, Mercury, Platinum, &c.
- X.—Gems and Precious Stones.
- XI.—Ornamental and Building Stones.
- XII.—Cements and Clays.
- XIII.—Salts and Fertilizers.
- XIV.—Mineral Paints.
- XV.—Grits and Spars.
- XVI.—Other Valuable Minerals.

212 Pages—Cloth Bound—Pocket and Flap.

Price One Dollar, post paid.

FREDERICK H. SMITH,  
Engineer and Geologist,

287 E. German Street, - - Baltimore, Md.

**RYDER & DEARIN**  
DESIGNERS  
WOOD ENGRAVERS &  
FINE COMMERCIAL PRINTERS.  
PHOTO-ENGRAVING IN ALL ITS BRANCHES.  
Specialists in fine Machinery and general Wood Engraving, Portraits, Buildings, etc. Artistic designs in Letter and Bill Heads, Business Cards, Display Lettering for advertising purposes, etc. Best work. Lowest prices. Electrotyping at lowest rates. 146 WESTMINSTER STREET, PROVIDENCE, R. I.

**MENGEL'S**  
PRINTING- PRESSES, CUTTERS, PRINTING MATERIALS, INKS, &c.

LARGEST TYPE AND ELECTROTYPE FOUNDRY AND PRINTERS' SUPPLY HOUSE SOUTH OF PHILADELPHIA.

Our Type is now used by The Baltimore Sun, Washington Post, Critic, Herald, Public Opinion, and nearly all the leading Newspaper and Book Offices in the vicinity. Send for estimates.

JOHN G. MENGEL &amp; CO.

No. 111 E. GERMAN ST., BALTIMORE, MD.

**ATLANTIC TRANSPORT LINE,**  
BETWEEN BALTIMORE AND LONDON  
Calling at Swansea and Philadelphia on the outward passage.

S.S. Minnesota, 5,000 tons. S.S. Missouri, 4,250 tons.  
S.S. Maryland, 4,500 tons. S.S. Michigan, (Bldg.)  
S.S. Montana, 4,500 tons. S.S. Mississippi, (Bldg.)  
S.S. Maine, 4,150 tons.

**BALTIMORE STORAGE & LIGHTERAGE CO.**  
235 La Salle Street, and 10 Fenchurch Street,  
Chicago, Ill. and London.  
429 Second Street, Baltimore, Md.

## THE BAY LINE

Fortress Monroe, Norfolk and the South.

The Bay Line comprises the New and Elegant Steamers "VIRGINIA," "CAROLINA" and "FLORIDA."

All the Comforts and Luxuries of a First-Class Hotel are afforded the traveler. Spacious and elegant saloons and staterooms, furnished with an especial view to comfort. Unsurpassed Cuisine, which is made a specialty with this Line. Elegant service and courteous attention. Steamers leave Baltimore daily (except Sundays) at 9 P. M. At Old Point Comfort is located the SLENDID HYGELA HOTEL, a Delightful Resort at all Seasons of the Year. For Tickets and information apply at Company's office.

157 W. BALTIMORE STREET, BALTIMORE.

Or on Board of Steamers.

D. J. HILL, Superintendent.

E. BROWN, General Ticket Agent.

THE BRADSTREET  
Mercantile Agency

WAS ESTABLISHED IN 1849.

Is the oldest and financially the strongest organization of its kind, working in one interest and under one management, with more capital invested in the business, and expends more money every year for the collection and dissemination of its information than any similar institution in the world. Its reports are considered in the light of a guide by both investors and those contemplating the granting of credit. In addition to a large corps of skilled employees, more than one hundred thousand correspondents contribute the result of their investigation and opinions. Subscriptions are annual, and may commence at any time the subscriber elects. Details as to prices and terms will be furnished upon application.

CHARLES F. CLARK, President.

Baltimore Office—American Building.  
H. KERSHAW, Supt.

NOW READY.

## POOR'S MANUAL

OF THE

Railroads of the United States

FOR 1890.

(In which is incorporated POOR'S DIRECTORY OF RAILWAY OFFICIALS AND RAILWAY DIRECTORS.)

The Work Contains Detailed  
Statements of the Operations  
and Condition of Every  
Railroad Company in  
the Country.

In one Volume. 1,500 Pages, Cloth, Royal  
Octavo. 20 Specially-Engraved Maps,

Corrected to Date of Issue.

Price, \$6 per copy.

Messrs. H. V. & H. W. POOR announce the publication of the twenty-third annual number of this work, in which is given in full detail the financial condition and results of operations of all the railroad companies for 1889. Statements, revised by each company prior to publication, will be given for about 2,500 companies.

Briefly outlined, the contents of the work are: Introductory statements showing in tabular form the mileage, equipment, capital stock, funded and floating debts, cost of road and equipment, investments, train mileage, passenger and freight statistics, earnings, expenses, interest and dividend payments, etc., etc., of the entire railroad system of the country, arranged by States and groups of States. The completeness of these tabulations has secured for the Manual the prestige of official recognition in all statistical circles.

Statements showing for a series of years the total mileage, construction, stock, debt and costs of the railroads of the country, the total mileage of all the railroads of the world, and numerous other selected statistics.

Detailed statements of every railroad company in the country. These are the most important features of the book, comprising 1,000 of its 1,500 pages. Following are the important points of the statement: Terminal points and mileage of main lines, branches, leased lines, etc.; second track, sidings and other tracks; gauge, weight of rails and mileage of steel rails; details of equipment; complete sketch of corporate history; terms of leases or other contracts; operations, earnings, etc., for last fiscal year, and (for all larger corporations) comparative tabular statement for eight years; detailed balance sheet; statement of funded debt, with description of security, rate of interest, place of payment of interest, names of trustees, date of maturity, etc.; statements of all dividends paid since organization; time of holding annual meeting; names and addresses of directors and of general officers, location of general and transfer offices, etc., etc.

For most companies the statements printed in the Manual are the only detailed ones furnished to the public, and the Manual has thus become the only medium by which an accurate knowledge of their affairs can be obtained.

Statements of the funded debts of the several States, giving dates of issue, maturity, interest rate, date of interest payments, amounts, etc., of each several class of bonds.

**SPECIAL.** The current number of the MANUAL contains 49 new maps of the leading Railroad Systems of the country. These are in addition to the MANUAL'S sectional maps, which are presented as heretofore.

## THE DIRECTORY OF RAILWAY OFFICIALS

Contains lists of Officers of all Steam Railroad Companies in the United States and Canada; Officers of all Street Railroad Companies in the United States and Canada; Officers of Private Tram and Lumber Railroads, etc., etc.

## TO THESE ARE ADDED

Special lists of General Managers, General Superintendents, Chief Engineers, Master Mechanics, Master Car Builders, Master Car Painters, General Freight and Passenger Agents, Purchasing Agents, etc.

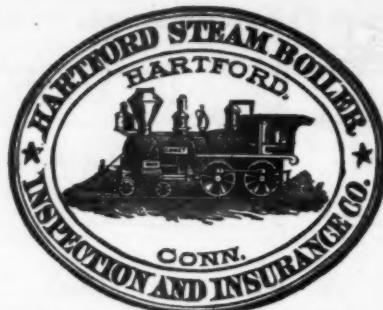
## FOREIGN RAILROADS.

In addition to the information given respecting the Railroads of the United States and Canada, the very excellent list of railroads in Mexico, West Indies, Central America, South America and Hawaiian Islands given in last number of this work, and which proved such an acceptable feature of the book, has been very much improved and elaborated.

The price of the Manual is SIX DOLLARS—this price covering the cost of delivery in the United States and Canada. Orders for copies are now invited, those received first being assured earliest attention.

H. V. &amp; H. W. POOR,

707 Wall Street, NEW YORK.



Issues Policies of Insurance after Careful Inspection of the Boilers, covering Loss or damage to property, and Loss of Life and Personal Injury

ARISING FROM STEAM BOILER EXPLOSIONS.

Full information concerning the plan of the Company's operations can be obtained at the COMPANY'S OFFICE, Hartford, Conn., or at any Agency.

J. M. ALLEN, President.  
J. B. PIERCE, Secretary.

W. B. FRANKLIN, Vice-Prest.  
F. B. ALLEN, 2d Vice-Prest.

## BOARD OF DIRECTORS:

J. M. ALLEN, President.  
FRANK W. CHENEY, Treas. Cheney Bros. Silk Mfg. Co.  
CHARLES M. BEACH, of Beach & Co.  
DANIEL PHILLIPS, of Adams Express Co.  
RICHARD W. H. JARVIS, Pres. Colt's Fire Arms Mfg. Co.  
THOMAS O. ENDERS, Pres. of the United States Bank.  
LEVERETT BRAINARD, of The Case, Lockwood & Brainard Co.  
GEN. WM. B. FRANKLIN, late Vice-Prest. Colt's Patent Fire Arms Mfg. Co.  
NEWTON CASE, of The Case, Lockwood & Brainard Co.

NELSON HOLLISTER, of State Bank, Hartford.  
HON. HENRY C. ROBINSON, Attorney-at-Law, Hartford.  
HON. FRANCIS B. COOLEY, of the Nat. Exchange Bank, Hartford, Conn.  
A. W. JILLSON, late Vice-Prest. Phoenix Fire Insurance Co., Hartford, Conn.  
EDMUND A. STEDMAN, Treas. of the Fidelity Co., Hartford, Conn.  
CLAPP SPOONER, Bridgeport, Conn.  
GEORGE BURNHAM, Baldwin Locomotive Works, Phila.  
HON. NATHANIEL SHEPARD, Judge U. S. Circuit Court, Maryland. Department—LAWFORD & McKIM, Gen. Agents 22 S. Holiday St., Baltimore.

ESTABLISHED 1876.

**BUDDEN SON.**  
AND  
10 & 12 W. WALL ST.  
PRINTING & BINDERS.  
ATLANTA, GA.

Bonds. CERTIFICATES OF STOCK. LABELS. Office Stationery. SHOW CARDS & ADVERTISING NOVELTIES.

**AULT & WILBORG.**  
PRINTING INKS.  
CINCINNATI.  
A & W INK USED ON THIS PUBLICATION

## BRANCH OFFICES:

133 and 134 Monroe Street, Chicago.

6 Gold Street, New York.



# THE WASHINGTON HYDRAULIC PRESS BRICK COMPANY,

MANUFACTURERS OF  
Ornamental and Plain Front Pressed Brick in Red, Brown,  
Gray and Buff Colors, also Rock-Faced and Roman Brick

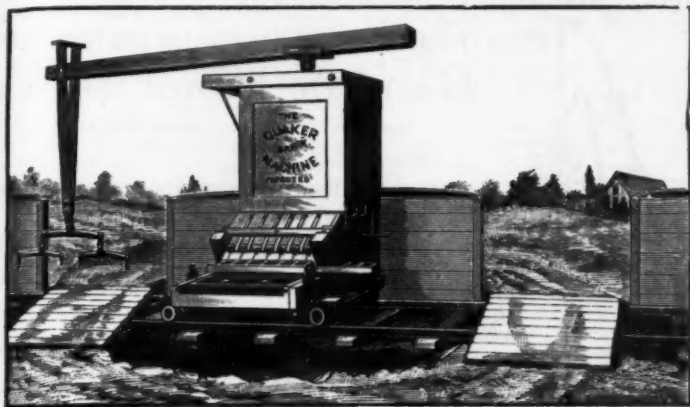
Brick for Arches Ground to any Radius.

Correspondence and Inspection of Works Solicited.

OFFICE: Kellogg Building, Washington, D. C.

Works at Waterloo, Va.

## Improved Brick Machinery AND BRICK MAKERS' SUPPLIES.



### THE NEW QUAKER HORSE-POWER BRICK MACHINE,

Capacity 15,000 to 20,000 per day. Steam-power 25,000 to 40,000 per day.

Spiral Pug Mills, Mold Sanding Machines, Molds, Barrows, Trucks, &c., &c. We contract to furnish and Equip Complete Yards, Engines, Boilers, Shafting, Pulleys, Belting, &c., &c. Correspondence Solicited. Send for illustrated Catalogue.

**FLETCHER & THOMAS, Indianapolis, Ind.**

## Chambers' Brick Machinery



15,000, 25,000, 50,000 per day Capacity.

GUARANTEED AND FURNISHED ON THIRTY DAYS' TRIAL.

**CHAMBERS BROS. CO., Philadelphia, Pa.**

### OHIO BRICK AND TILE MACHINES,

Three sizes, with and without Crusher Rolls.

BUILDING, PAVING AND FIRE BRICK,

CAPACITY:

10,000 to 40,000 DAILY.

Drain Tile, Hollow Build-  
ing Blocks, &c.

Unequaled.

Write for Catalogue.



**E. M. FREESE & CO.**

Plymouth, O., U. S. A.

**BRICK-MAKER'S SUPPLIES**

TRUCKS   MOLDS   BARROWS   & C.   MACHINES   & FOUNDRY   WORK

**G. W. RAYMOND & CO.**  
DAYTON, O.



Send for Illustrated Catalogue.

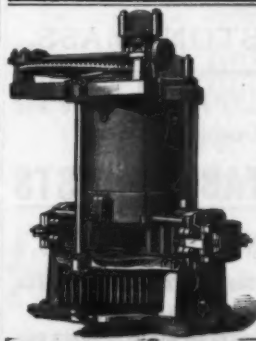
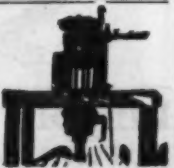
Mention Manufacturers' Record.



### Brick and Terra Cotta Machinery

Steam Sewer Pipe Presses, Dry Pans  
for Grinding Clay, Wet Pans for  
Tempering Clay, Pug Mills  
and Engines. Complete  
Outfits.

**STEVENSON & CO., Wellsville, O.**



## Brick Machinery

Capacity 15,000 to 100,000.

Pug Mills, Crushers, Elevators, Etc.

Full Outfits a Specialty. Satisfaction Guaranteed.

ADDRESS

**J. W. PENFIELD & SON**

WILLOUGHBY, OHIO, U. S. A.



### PHOSPHOR-BRONZE

INGOTS, CASTINGS & MANUFACTURES.

THE PHOSPHOR BRONZE SMELTING CO. LIMITED

512 ARCH ST. PHILADELPHIA PA. U. S. A.

ORIGINAL MANUFACTURERS OF PHOSPHOR  
BRONZE IN THE UNITED STATES AND OWNERS  
OF THE U. S. PATENTS.

**PRINTING  
PRESSES**

TYPE AND PRINTERS' MATERIALS  
OF EVERY DESCRIPTION.

THE JOHN RYAN CO.

BALTIMORE, MD.

## RICHMOND & DANVILLE R.R. CO. (PIEDMONT AIR-LINE.)

THE SHORT AND DIRECT LINE FROM

**Washington, D. C., and Richmond, Va.,**

To Atlanta, Augusta, Columbia, Asheville, Raleigh, Greensboro, Salisbury,  
Goldensboro, Birmingham, Montgomery, Vicksburg, Shreveport, Mobile,  
New Orleans, Texas, Mexico and California, and the  
South and Southwest.

DOUBLE DAILY, SOLID TRAINS between Washington and Atlanta.  
Pullman's Palace Buffet and Drawing-Room Sleeping Cars without change  
Atlanta, New Orleans, Augusta, etc.

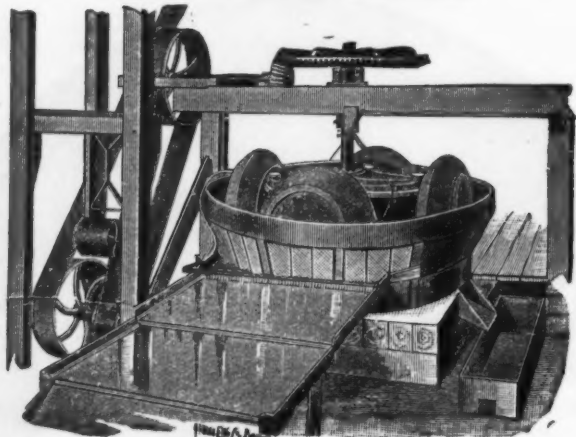
For maps, time-tables, rates of passage, freight, etc., apply to nearest Station Agent of the Pied-  
mont Air Line, or to any Railroad Agent of principal line North or South.

FEYTON RANDOLPH, General Manager.

SOL. BAAS, Traffic Manager.

JAS. L. TAYLOR, Gen. Pass. Agent.

## WISWELL Ore Pulverizer and Amalgamator COMBINED.



The following testimonial from Mr. Marsden, of the firm of Farrel & Marsden, manufacturers of Stone Breakers and Ore Crushers, Ansonia, Conn., speaks volumes for the Wiswell Mill:

*Wiswell Electric Mining Machinery Co.:*

GENTLEMEN—After carefully inspecting your mill and seeing it in operation, I do not hesitate to say that it is one of the best, if not the best pulverizer and most complete gold-saving machine I have ever seen. Please accept congratulations for your success.

S. L. MARSDEN.

WE FURNISH A COMPLETE MILL FOR \$2,500, DELIVERED ON BOARD CARS.

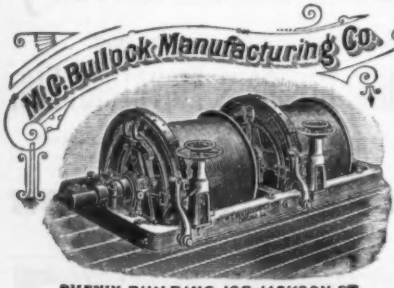
FOR FURTHER INFORMATION ADDRESS

**Wiswell Electric Mining Machinery Company,**

4 POSTOFFICE SQUARE,

A. A. REEVE, Treasurer.

BOSTON, MASS.



PHENIX BUILDING 138 JACKSON ST.

Lane's Band Friction Single and Double Cylinder

**PORTABLE HOISTS**

STANDARD DRUMS,  
Winze Hoists, Exploring Hoists,  
Wire Rope Haulage Machines,  
ORE BUCKETS, SKIPS,  
CAGES AND SHEAVES,  
STEAM PUMPS, BOILERS, Etc.

**Bullock's Diamond Prospecting Core Drills,**

For Surface or Underground Prospecting. No Restrictions as to Use.

THE ONLY RELIABLE DIAMOND DRILL MADE.

Improved Corliss Engine, Slide Valve and Straight Line Engines,

Eclipse Rock Drills, Air Compressors and Quarrying Machines.

WRITE FOR WHAT YOU WANT.

Cable Address, BULLOCK, CHICAGO.

**Wardwell Stone Channeling  
AND  
Quarrying Machine.**

WILL pay for itself in a short time in reduced cost of getting out Stone. Has no equal for efficiency and economy of operation. Pronounced by those who have used it the best machine for the purpose in the world. Send for illustrated catalogue, with full descriptions and letters from parties now using the machines.

**Steam Stone Cutter Co.**  
RUTLAND, VERMONT.



## SULLIVAN DIAMOND Prospecting Core Drills.

THE MOST RELIABLE AND  
SATISFACTORY MADE FOR PROSPECTING FROM THE  
SURFACE OR UNDER GROUND.

RAPID! ACCURATE! ECONOMICAL!



"N" Drill—Capacity 2,000 feet.

SPECIALLY ADAPTED TO SOUTHERN COAL AND IRON FORMATIONS.

**Hand or Power Drills,**

Capacities 300 to 4,000 feet. All sizes in stock.

SEND FOR CATALOGUE.

**Sullivan Diamond-Pointed and Steel  
Gang Quarrying Machinery.  
Steam Pumps, Boilers.**



M Hand Drill—Capacity 300 ft.

Contractors for prospecting mineral lands with the  
Diamond Core Drill.

**DIAMOND PROSPECTING CO.**

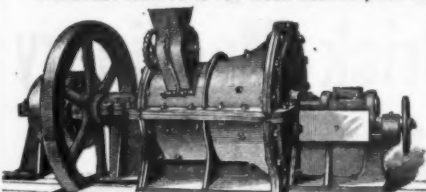
15 and 17 N. Clinton Street,

Eastern Office, 18 Broadway, New York.  
Cable Address, "DIAMOND, CHICAGO."

CHICAGO, ILL.

## The Greatest Pulverizer in the World.

Pulverizes from 10 to 160 mesh fineness, and has a capacity of 1 to 3 tons per hour.



For pulverizing Phosphates, Plumbago, Cement, Foundry Facings, Iron for Paints, Gold and Silver Ores, Flint Rock for Glass, Coke for Carbons, Paints, Asphalt Materials, Feldspar, Red Ochre, Sandstone, Limestone and Calcined Lime. Correspondence solicited. Send for samples of different products.

**F. H. MOORE,**  
Manufacturer,

48 City Hall Bldg., Cleveland, O.

## GATES ROCK AND ORE BREAKER.

CAPACITY IN TONS OF 2,000 POUNDS.

Size 6— 2 to 4 tons per hour.	Size 4— 15 to 30 tons per hour.
" 1— 4 to 5 "	" 5— 25 to 40 "
" 2— 6 to 10 "	" 6— 30 to 60 "
" 3— 10 to 20 "	" 7— 40 to 75 "
	" 8— 100 to 150 "

Passing 2 1/2 in. ring, according to character and hardness of material.

Great SAVING IN POWER. Adjustable to any Degree of Fineness.

The principle involved in this Breaker acknowledged to be the greatest success ever introduced into Stonebreaking Machinery. The Gates Breaker has made more railroad ballast and road metal than all other kinds of breakers combined.

Universally Adopted by Mining Companies.

Many Hundreds Used by Railway Companies.

Will furnish a thousand references from Contractors, Street Superintendents, Mines, Cement Manufacturers, etc., etc.

ALSO MANUFACTURE

**The Cornish Rolls Pulverizer.**

Fine Crushing Plants, Concentrators  
and other Mining Machinery.



Address for Catalogue,

**GATES IRON WORKS,**

73a Queen Victoria Street, LONDON.

44 Day Street, NEW YORK.

50 H South Clinton St., CHICAGO.

215 Franklin Street, Boston, Mass.



**WILLIAMSPORT WIRE ROPE CO.**

MANUFACTURERS OF

Iron, Steel and Galvanized

**WIRE ROPE**

STREET CABLES A SPECIALTY.

WILLIAMSPORT, PA.

Correspondence Solicited with Southern Coal and Quarry Companies.

**Lincoln Iron Works. Machinery**  
RUTLAND, VT. For working Marble, Stone and Wood Shafting, Pulleys and Gearing. Send for Catalogue.





**H. K. PORTER & CO., PITTSBURGH, PA., U. S. A.****Light Locomotives and Noiseless Motors**

All gauges of track for Passenger and Freight Service, Logging Railroads, Mines, Blast Furnaces, Steel Works, Coke Ovens, Contractors' Work and Plantations.

All sizes and patterns, adapted to steep grades and sharp curves. Noiseless and smokeless. Cheaper and more reliable and efficient, and less objectionable than electric or cable system.

Photographs and illustrated catalogue on application. In writing mention MANUFACTURERS' RECORD.

Memo.—All work STEEL FITTED and built to duplicate system. Extra parts kept in stock. We keep on hand, ready for immediate shipment, LOCOMOTIVES AND MOTORS OF SEVERAL SIZES, WIDE OR NARROW GAUGE.

**BALDWIN LOCOMOTIVE WORKS**

ESTABLISHED 1837.

ANNUAL CAPACITY 800.

**Richmond Locomotive & Machine Works, Richmond, Va.**

ESTABLISHED IN 1855.

Builders of

**LOCOMOTIVES**

for every variety of service to Standard Designs or to meet views of purchasers.

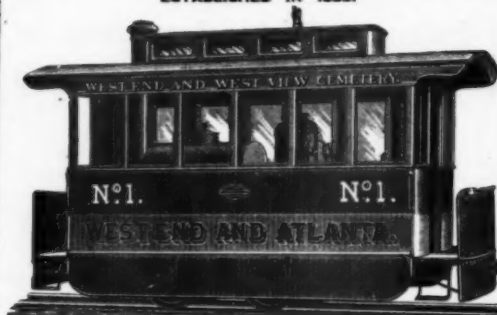
**MOTORS**

for Street Railways, Tram Roads and Mines.

Stationary Engines for heavy duty.

**BOILERS,**

Standard or Special. Send for Catalogue, Specifications and Estimates.

**Locomotive Engines, Locomotives for Logging**

Adapted to every variety of service, and built accurately to standard gauges and templates.

RAILROADS AND SUGAR ESTATES.

Steam Tramway Motors, Mine Locomotives, Furnace Locomotives.

Burnham, Parry, Williams & Co., 500 N. BROAD STREET, Philadelphia, Pa.

In writing, please refer to Manufacturers' Record.

**DYOTT & CO. 52 WALL STREET. NEW YORK.****Railroad Equipment AND SUPPLIES.**

Locomotives, Cars, Rails, FASTENINGS, SPIKES, ETC.

Frogs, Crossings, Switches, &c. Securities negotiated. Contracts taken.

**Knoxville Car Wheel Co**

KNOXVILLE, TENN.

Manufacturers of all kinds of

**CHILLED WHEELS**

For Railroads, Street Railroads, Ore and Coal Mines and Lumbermen.



Steam Hammers,  
Foundry Cupolas,  
Derricks, Crabs,  
Horse-Powers,  
Shieves, Drill Heads,  
Gearing, Pulleys.  
Locomotives and Engines  
Repaired and Indicated.

CORRESPONDENCE SOLICITED.

Guild's Automatic  
Boiler Cleaner,  
Car and Locomotive Castings.  
Soft Iron Castings of all kinds.  
Heavy Castings a specialty.  
Wheels mounted on Axles if  
desired, with Oil Boxes  
and Bolts.

MENTION THIS PAPER.

**STEEL RAILS****PENNSYLVANIA**

Standard Sections  
Light Sections  
Street Rails

Fish Plates,  
Frogs, Switches

STEPHEN W. BALDWIN  
SALES AGENT

16 lbs. Full Size.

**STEEL COMPANY**

50 to 80 lbs. per yard  
16 " 45 " " "  
30 " 88 " " "  
Bolts & Nuts,  
and Crossings.

NO. 2 WALL STREET,  
NEW YORK N.Y.

**COLD DRAWN** **FITZSIMONS & CO. Manufacturers** **IRON**  
**SHAFTING** **STEEL**  
CLEVELAND, OHIO.

**STEEL CASTINGS**

From 1-4 to 15,000 lbs. Weight.

True to pattern, sound, solid, free from blow-holes, and of unequal strength. Stronger and more durable than iron forgings in any position or for any service whatever. 60,000 CRANK SHAFTS and 20,000 GEAR WHEELS of this steel now running prove this. CRANK SHAFTS and GEARING specialties. STEEL CASTINGS of every description. Send for circulars and prices to

CHESTER STEEL CASTINGS CO.

Office, 407 Liberty St., Philadelphia.

Works, Chester, Pa.

**CHARLES BURGESS,**

MANUFACTURER OF ALL GRADES OF

**CRUCIBLE TOOL STEEL**

Including SELF-HARDENING STEEL for MAILERS', LATHE and PLANER TOOLS.

Warranted Equal to any Brand Made.

Extra Quality Cast Steel for Shafts and all special tool purposes.

CYCLOPS STEEL WORKS, Titusville, Pa.

**MINER & PECK M'F'G CO.,**

SUCCESSORS TO BEECHER & PECK

**THE PECK PATENT DROP PRESS**  
DROP FORGINGS BLAST FORGES  
NEW HAVEN, CONN.

**BRADLEY AND FORCES**

BEST HAMMERS IN THE WORLD RUN BY BELT

OVER 1500

IN USE.

Three Styles, 15 lb. to 500 lb. Heads. Our FORCES heat irons fast enough to keep Hammers and Men fully employed. Send for Catalogue and Prices.

BRADLEY & CO., SYRACUSE, N. Y.

14 WARREN ST. NEW YORK. 96 & 98 SUDBURY ST. BOSTON.

TRADE



## The Vulcan Iron Works Co.

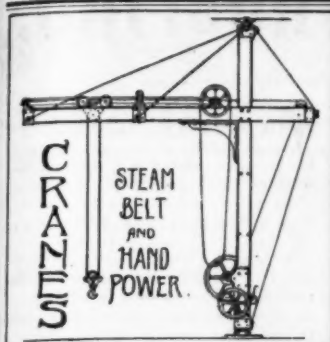
TOLEDO, O.



Write for  
Descriptive  
Matter.

MANUFACTURERS OF  
Dredges and Excavators,  
MARINE, HOISTING and  
STATIONARY ENGINES,  
Foundry, Rolling Mill and  
Dock Cranes.  
A general line of Plain and Or-  
namental Boiler Fronts and  
Fittings and General  
Founders.

The "Little Giant" Excavator  
WEIGHT 30 TONS.  
Capacity 1,500 cub. yds. per day  
The "GIANT" RAILROAD EXCAVATOR,  
WEIGHT 40 TONS.  
Capacity 2,000 cub. yds. per day



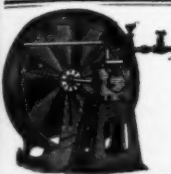
## Detroit Foundry Equipment Co.

DETROIT, MICH.

—MANUFACTURERS OF—

## WHITING'S IMPROVED Car Wheel Foundry Plant.

The Whiting Cupola Foundry Ladles and  
Reservoirs, Elevators, Clay Grinders,  
Wheel Breakers, Tumblers, Snap  
Flasks, Wheelbarrows, &c.  
Correspondence Solicited.



## VENTILATE! VENTILATE!

Your Workrooms with

## Clark's Light-Running Adjustable Blade Exhaust Fans

Suitable for Removing Hot Air, Dust, etc. 30 days trial allowed.

CATALOGUE FREE.

GEO. P. CLARK, Box C, Windsor Locks, Ct.

ESTABLISHED 1832 ON PRESENT PREMISES.

The Best  
—IS—  
ALWAYS  
—THE—  
Cheapest.



Therefore  
BUY OUR  
COLOPHINE  
—OR—  
Perfect Oils

The above are our specialties in MACHINERY OILS, and are the best oils for the price manufactured. We can give you anything in the OIL LINE, any grade, at the very lowest prices. Correspondence solicited.

**WM. C. ROBINSON & SON,**  
MANUFACTURERS AND DEALERS IN OILS,  
217 South Street Baltimore, Md.

## Chattanooga Paint Company.

CHATTANOOGA, TENN.

Manufacturers of the

«BEST OXIDE OF IRON PAINT MADE IN THE UNITED STATES.»

Over 18,000 tons made since 1880. 3,000 tons made in 1888. Over 500 certificates regarding its qualities. Either dry or mixed ready for use.

SEND FOR PRICES DELIVERED AT POINT OF DESTINATION

## IRON CLAD PAINT CO., Cleveland, O.

Factory, 75 &amp; 77 Central Way. JAMES WADE, Sec. &amp; Treas., 3 Case Bldg.

ORDER DIRECT FROM THE

## Iron Clad Paint Co.

And get the genuine article, and save liability of suit for using an article made in violation of the patents issued to Wm. Green, and now owned by this Company.

IRON-CLAD PAINT is the most durable, most fire-proof and cheapest Paint made.

FURNISHED both Dry and Ground in Oil.

USED BY NEARLY ALL THE RAILROADS.



Trade Mark Patented Paint Pa.ented.

# RIVETS

## HOOPES & TOWNSEND,

PHILADELPHIA, AND

## The HOOPES & TOWNSEND CO.

WILMINGTON, DEL.

Cone, Button, Flat, Rose, Counter-Sunk, Button Counter-Sunk and Steeple Heads.

BOILER,

SHIP,

CAR,

STACK,

BRIDGE,

TANK,

COOPER

# RIVETS

Established 1874.

## The Cincinnati Screw & Tap Co.

—MANUFACTURERS AND DEALERS IN—

ALL KINDS OF SET, CAP AND MACHINE

# SCREWS,

Morse Twist Drills, Tap Wrenches, Taps, Dies, Drill Chucks,  
Cold Punched Nuts, Reamers, Green River Screw  
Plates and Bolt Cutters.

ALL CITY ORDERS DELIVERED FREE OF CHARGE.

N. E. Cor. Second and Plum Streets, CINCINNATI, O.

## MACHINERY! MACHINERY!

OVER 6,000 MACHINES } NEW AND REBUILT, { LOWEST RATES OF FREIGHT OBTAINED

In endless variety, fully described, with prices annexed, in our catalogue as below specified.

Catalogue No. 44.—Machine Shop and Blacksmith Equipment. 80 pages, each 14 in. x 11 in.

Catalogue No. 45.—Engines, Boilers, Pumps and Steam Fittings. 70 pages, each 14 in. x 11 in.

Catalogue No. 46.—Wood Working and Grist Mill Machinery, Water Wheels and Mill Supplies. 125 pages, each 14 in. x 11 in.

Send us stamps for catalogue, stating exactly what class of machinery you require, and to what paper you saw the advertisement. W. E. DREW, Agent,

S. C. FORSAITH MACHINE CO. Machine and General Machinery Dealers, Manchester, N. H.

## Build & Repair Your Machinery

BY USING

Engine Lathes, Planers,  
Chucking Lathes, Hand Lathes,

MACHINE TOOLS GENERALLY

MANUFACTURED BY

LATHE &amp; MORSE TOOL CO.

Worcester, Mass., U. S. A.



Established 1845.

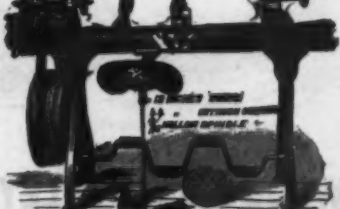
T. K. Carey &amp; Bros.

Southern Agents,

BALTIMORE, MD.

## Barnes' Patent Foot Power Machinery.

Complete outfit for Actual Workshop Business. Lathes for Wood or Metal. Circular Saws, Scroll Saws, Formers, Mortises, Turners, etc., etc.



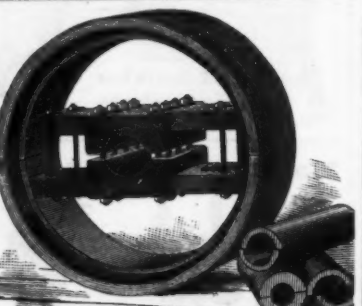
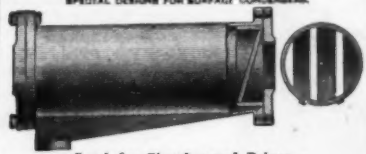
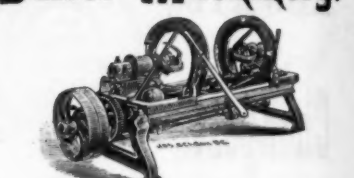
Our Patent Foot-Power is without question the best yet applied to Lathes. Read a few expressions from those using them: "I do not see how your lathe can be produced at so low cost." "The foot-power lathe is simply elegant." "Can turn a whole day and feel as little tired as though only walking around." "In regard to the foot-power lathe, I consider the lathe without an equal." "I sat at the lathe for 11 hours, turning off and threading 1 1/2 steam pipes. Those who saw it declared it equal to 15 hour job in machine shop." "Using the foot-power, the operator can hold a steady hand for doing the work." "For doing actual business, the lightest on the market, give me the foot-power lathe." "The 4 1/2 lathe is equal to any casting twice the money." "What astonishes me is, how you can make machines to pay you for so small sum of money." "The No. 4 lathe is the most perfect tool I ever saw for the money." "I can do double the amount of work on the foot-power, that I can on any other style of foot-power lathe." "There is no tax on strength, the body is at rest, steady, the hands and attention free for the job." "The foot-power—It is the best foot-power of any for lathes." "If desired, these machines will be sold ON TRIAL. The purchaser can have ample time to test them in his own shop and on the work he wishes them to do. Descriptive Catalogue and Price-List Free."

W. E. &amp; JOHN BARNES CO., No. 221 Ruby St., Rockford, Ill.

THOMAS K. CAREY &amp; BROS., 26 Light St., Baltimore Agents.

**Stuebner & Woods**

MANUFACTURERS OF

**Self-Dumping Steel & Iron  
Hoisting Tubs,**Side and Bottom Dumping  
Cars for Coal Elevators,  
Iron Wheelbarrows, Hoisting  
Blocks, Bottom-dumping Tubs  
for Coaling Locomotives, &c.LONG ISLAND CITY, N. Y.  
Send for circular and price-list.**THE HONEST HORSE  
"RACE"  
CATALOGUES FREE**  
**SOAP & CANDLE  
MACHINERY**  
**SPECIAL  
MACHINERY  
DESIGNED.**  
**A.W. HOUGHIN.**  
11 VINE ST.  
BROOKLYN, N.Y.**FINE SHOW CASES.**  
48" Ask for catalogue.  
**TERRY MFG CO., NASHVILLE, TENN.****DRILLING MACHINES,****Upright  
AND  
Radial Drills,  
SINGLE COLUMN  
Boring and  
Turning Mills.**  
For catalogues and  
prices address  
**Bickford Drill Co.**  
170 TO 180  
E. FRONT STREET,  
CINCINNATI, O.**ROLLER and  
Detachable Chain Belting,**Detachable in Every Link,  
FOR IMPROVED  
**ELEVATORS,  
CONVEYERS,  
AND  
Driving Belts**  
FOR HANDLING  
Coal, Ores, Grain,  
CLAY, BRICK, &c.  
ADDRESS  
**The Jeffrey Mfg. Co.**  
121 W. State St., Columbus, O.**Stow Flexible Shaft Co., Limited,**2220 Pennsylvania Ave.  
**PHILA., PA.**  
Manufacturers of  
**FLEXIBLE SHAFTS,**  
And ALL KINDS OF MACHINES TO  
BE USED WITH THEM.  
Portable Drilling, Tapping, Ream-  
ing and Boring Machines. Also  
Portable Tools for Emery Wheel  
Grinding, Metal and Wood Polishing,  
Cutting Brushing and Clipping, &c.  
Builders of Special  
Machines  
FOR  
Railroads, Bridge  
& Boiler Makers,  
Contractors, &c.**POWELL & LOCKWOOD,  
General Dairy Supply House,**112 Chambers St., New York City.  
Every Requisite for Milk, Butter and  
Cheese Industries.  
Write for Catalogue.**DAIRY MACHINERY**Complete Outfits a Specialty.  
**H. McK. WILSON & CO.**  
ST. LOUIS, MO.  
Handsome Dairy Illustrated Catalogue mailed  
free on application.**WHICH? BUTTER OR  
CHEESE.**If either, or both, send for  
**J.S. CARTER'S Illustrated**  
Catalogue, which gives full in-  
formation of latest and best method  
and appliances for making Cheese  
or Butter, from the largest fac-  
tory to the small dairy.  
Carter's Cream & Buttering  
System of Butter Making is success.  
**JOHN S. CARTER, Syracuse, N. Y.****R. M. JOHNSON,**  
Manufacturers' Agent and Dealer in Corliss  
Automatic Cut-Off and Plain Slide Valve**Steam Engines and Boilers.**Saw Mills, Machinists' Tools, Wood-Working  
Machines, Mining, Brick, Ice, Grist Mill, Dairy  
Canning and Electric-Lighting Machinery.  
Specialty: also Double Cylinder Traction En-  
gines. Complete outfits supplied at lowest prices.  
Correspondence is solicited.**R. M. JOHNSON, Waynesboro, Va.****Carpet  
Cleaning  
Machinery.****The Motor of the 19th Century.**2 to 40 H. P.  
Can be used ANY PLACE,  
to do ANY WORK, and by  
ANY ONE.  
No Boiler! No Fire! No  
Steam! No Ashes! No  
Gauges! No Engineer! No  
Danger! No Smoke!  
A perfectly safe motor for all  
places and purposes. Cost of  
operation about one cent an  
hour to each indicated horse-  
power. For circulars, etc.,  
address **CHARLES GAS**  
**ENGINE CO., P. O. Box 240, Sterling, Ill.****INDUSTRY FILE WORKS,****A. & H. GOUGH, Proprietors,**  
Manufacturers of  
**Files and Rasps**  
Equal to the best English File.  
**OLD FILES REOUT.**  
All kinds of Job Grinding.  
OFFICE AND WORKS,  
48 Columbus St., Cleveland, O.  
**C. GOUGH, Manager.**PATENTED MAY 29, 1888.  
**DOUBLE STRENGTH  
WOOD SPLIT PULLEY,**  
MANUFACTURED BY  
**Chattanooga Wood Split Pulley Co. Chatt., Tenn.****Barnard's Separator**For Separating and Removing Entrained  
Water from Live Steam;  
AND  
Condense Water, Oil, Dirt, Etc., from Exhaust Steam.  
SPECIAL DESIGN FOR SURFACE CONDENSERS.Send for Circular and Prices.  
**GEO. A. BARNARD,**  
15 Cortlandt St., New York.**Reducing Valves**Ours are the Standard  
used by the American and  
Southern Cotton Oil Com-  
panies and over 30 Rail-  
roads.SEND FOR PRICES.  
**Damper Regulators,  
Pump Governors, Etc.**  
**Mason Regulator Co.**  
**BOSTON.****JONES SCALES  
"THE CHEAPEST,  
THE BEST."  
FOR FREE CATALOGUE**  
ADDRESS  
**JONES OF BINGHAMTON, Binghamton, N. Y.****The WELLINGTON BELT HOLDER****LATELY  
IMPROVED.**  
Just the thing  
to shift large  
belts driving  
Dynamos, Blows,  
Gins, Saws,  
&c. Belt stops  
and slackens  
when machine  
stops. Thous-  
ands in use, cost  
very low. Sent  
on trial. Permit  
us to quote you  
prices.**W. R. SANTLEY & CO. Wellington, Ohio****TAPER-SLEEVE PULLEY WORKS**211 W. 12TH ST.  
**ERIE, PA.**  
Manufacturers of  
Taper-Sleeve Wood  
Belt Pulleys, Adjust-  
able Dead Pulleys,  
Friction Clutch Pul-  
leys, Friction Clutch**SHEPARD'S New \$800-SCREW-CUTTING FOOT LATHE**  
Foot and Power Lathes, Drill  
Presses, Scroll Saw Attachments,  
Chucks, Mandrels, Twist Drills,  
Dogs, Callipers, etc.  
Lathes on  
payment.  
Send for catalogue of Outfits  
for Amateurs or Artisans.  
Address **N. L. SHEPARD, Agent,**  
134 E. 2d Street, Cincinnati, Ohio.**ROOFING.****THE PROGRESS MADE IN THE**  
manufacture of Roofing Material  
has become so extensive that one estab-  
lishment in Philadelphia, Messrs. Mer-  
chant & Co., has branches in London,  
New York, Chicago and Kansas City.  
This firm is well known the world over,  
and one of the novel features connected  
with their mode of business as regards  
their tin department, is the fact that every  
single sheet goes through a printing  
process of being specially stamped. Every  
box is guaranteed, and every sheet is  
stamped. It is needless to add that  
through such careful precautions the con-  
sumer is enabled to know that he is ac-  
quiring the best and proper quality of tin.  
Any one in the building line wishing  
to become correctly informed on the sub-  
ject of tin roofing should address Mer-  
chant & Co., Philadelphia, and learn what  
will be of financial benefit to them.  
— National Builder, August, 1890.**E. & B. HOLMES,**  
BUFFALO, NEW YORK,  
MANUFACTURERS OF**Barrel Machinery.**  
**Chambers Patent Barrel Heater.**  
Capacity 300 tight or 500 slack barrels per day.  
The best Heater made.**E. & B. HOLMES, Sole Agents.****WIRE RAILING**and Ornamental Wire Works.  
**DUPON & CO. 113 & 115 N. Howard St., Baltimore.**  
Wire Railing for Cemeteries, Lawns, Gardens, Of-  
fices and Balconies; Window Guards, Tree Guards,  
Wire Cloth, Sieves, Fenders, Cages, Sash and Cell  
Screens, Iron Bedsteads, Chairs, &c.**WIRE & WIRE GOODS.**Wire Cloth, Rope, SCREENS for  
Coal and Ores. Barbed  
and Plain Fencing Wire. Bank  
and Office Railings.  
**LUDLOW  
SAYLOR  
WIRE CO.  
ST. LOUIS, MO.**  
Artistic Work a Specialty.  
Send for catalogue and mention this paper.



# Read What a Michigan Miller Says of the Case Company.

STURGIS ROLLER MILLS,  
BAUER & BUHRER, Proprietors.

STURGIS, MICH., July 12, 1890.

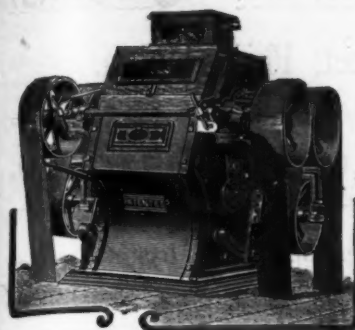
The Case Manufacturing Co., Columbus, Ohio:

GENTS—We started mill July 7th. The 12 pair 9x18 rolls you furnished us worked perfectly. They are so easy to adjust, so simple to handle, feed so regularly, grind so nicely and even, and work so smoothly on the whole, that we have no hesitancy in stating that we cannot see how they can have a superior, if equal. Aside from their perfect work, they are models of beauty and finish, and a decided ornament to any mill. We enclose clippings from papers. We are, with best wishes,

Very truly yours,

BAUER & BUHRER.

For full particulars regarding the best FLOUR OR CORN MILL MACHINERY, address



## THE CASE MANUFACTURING CO., Columbus, Ohio.

### Extra Heavy Band Saw.

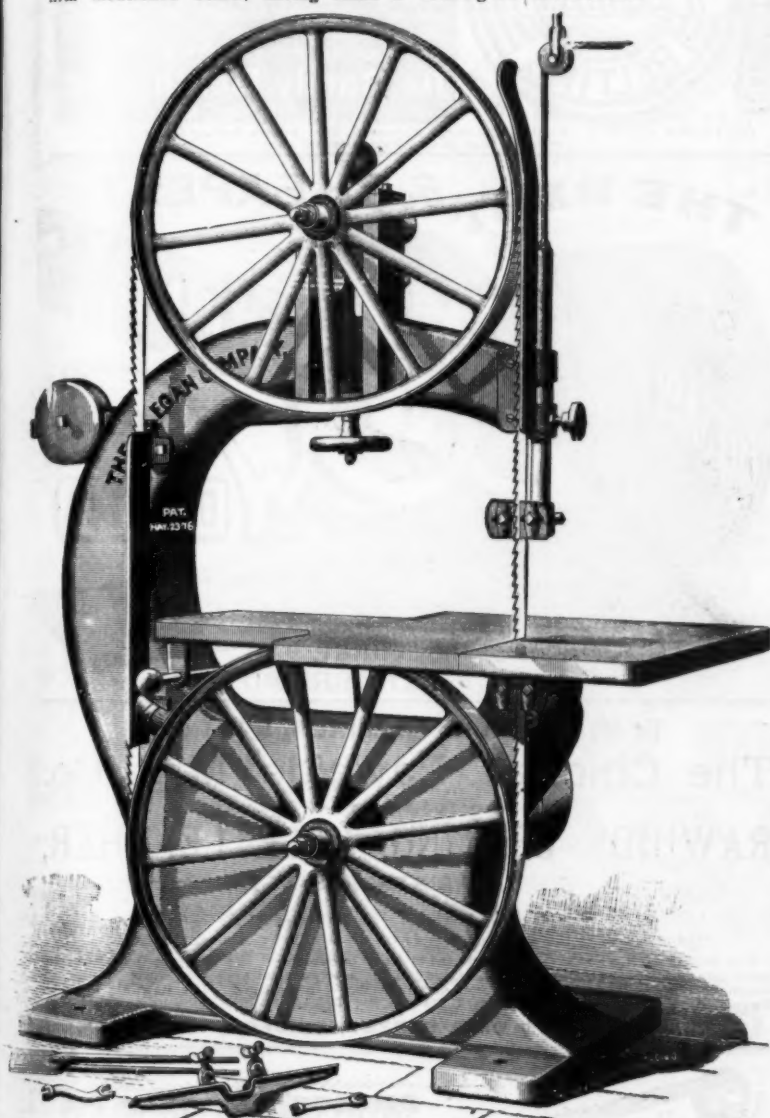
In the rapid development of the timber belts of the Southern section there is springing up a large number of woodworking industries which demand a heavier and more durable band saw than has heretofore been used. The hardwoods required in wagon, carriage and buggy work are cut to size and shape with the band saw, and the firm mentioned below, having made a

The wheels are 38 inches in diameter, made solid and turned perfectly true, and covered with pure gum bands. Being perfectly true, the breaking of saws is prevented.

The table is of iron, being provided with a new locking device for holding it at any angle desired, the top of the table at the point where the saw passes through being the center point, the saw always running true to the center.

improved plan, one set of roller-guides supporting the saw below the table, and another set above the table and attached to the adjustable guide-bar, the guide-bar

has drawing pulleys 12, 14 and 16 inches in diameter, respectively, and, being a belted mill, requires two pulleys on line shaft. A firm, after using one of the two first mills



EXTRA HEAVY BAND SAW.

specialty of them for this class of work, devised this new mechanism, represented by the accompanying illustration.

This new No. 3 patent band saw is designed for the very heaviest work. Very light work can also be done on it. It is especially suited to the work required in agricultural shops, wagon shops, heavy planing mill work, etc., and general woodwork where a heavy, reliable machine is required.

The column is very heavy, combining strength with neatness of design. The patented sliding bearing for the upper wheel shaft is placed on the column. The bearing can be raised and lowered by a hand-wheel and screw. The lever which gives the tension to the saw supports the screw. A change of tension can be made instantly to suit the work and width of the saw by adjusting the weight.

The patent roller-guides are made on an

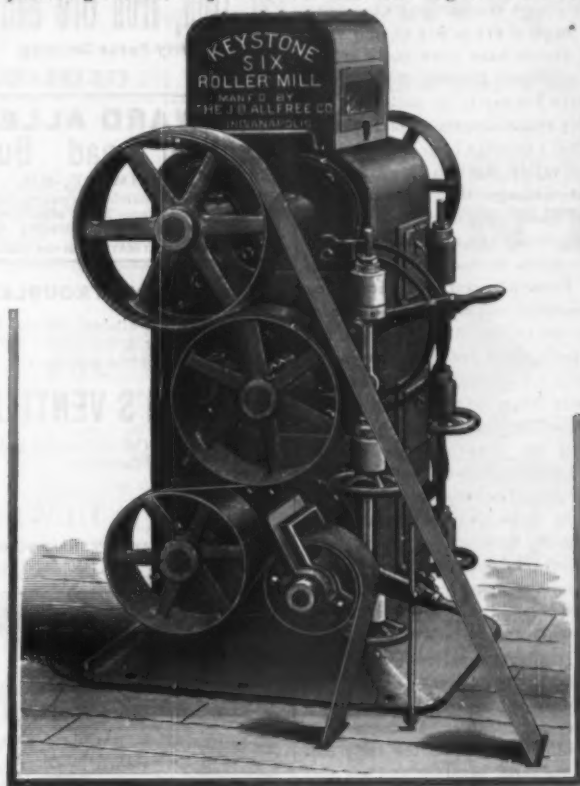


FIG. 1—THE KEYSTONE SIX-ROLLER MILL.

being raised and lowered by a counterweight provided for the purpose.

The patent tilting device for throwing the upper wheel and box to an angle so as to lead the saw-blade to any path on the face of the wheel that may be desired, is very simple and reliable.

The machine is furnished with patent belt-shifter and brake, shifting the belt and stopping the saw in the shortest possible time. The shifter is so arranged that the belt can be run at any point on the pulley. One Perin saw-blade is also furnished with the machine, together with brazing frame and tongs.

For further information address the Egan Co., 228 to 248 W. Front street, Cincinnati, Ohio, U. S. A.

### The Keystone Six-Roller Mill.

The presence of a considerable amount of foreign matter in corn has been an obstacle encountered in endeavoring to successfully use rolls in the milling of this cereal. The results of several years of experimenting revealed that a mill to cope with this obstacle must embody great strength, powerful drive, positive differential, both simultaneous and independent setting, great rigidity and simple and rapid tramming. The Keystone six-roller mill, of which the accompanying cuts present a good idea, is placed before the trade by the manufacturers, the J. B. Allfree Co., with the assertion that it embodies all these features. Any of the rolls may readily be removed without dismantling the balance of the machine, and can be re-cut until completely worn out. The machine

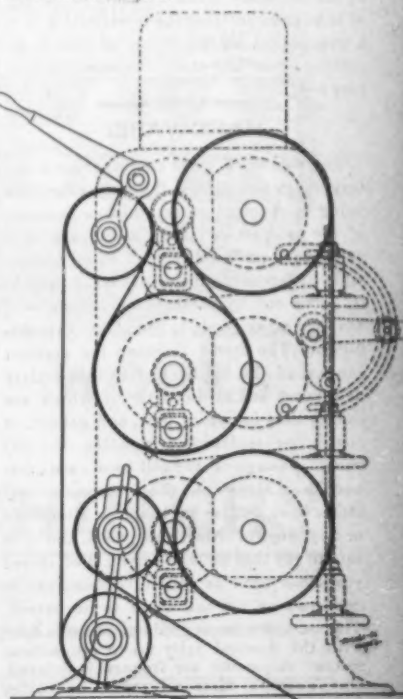


FIG. 2.—SECTIONAL VIEW.

built, reported to the makers that the meal manufactured was taking the lead of meal made on other rolls.

## The Markets.

OFFICE MANUFACTURERS' RECORD,  
BALTIMORE, September 10, 1890.

Reports from nearly all iron and steel centers North and South indicate a growth in business, coupled here and there with a hardening tendency in prices. Southern furnaces are well sold up, and very recent advices show a strong undercurrent towards firmer prices. The incoming furnaces will probably find a fair market awaiting their product. A large amount of business has been done during the summer, much larger than usual, at both Southern and Northern furnaces. No danger signals have been hung out as yet. Demand is expanding and stocks are everywhere under control. The rapid industrial expansion in all sections is broadening the demand for crude and finished iron and steel products. Southern No. 1 foundry is selling at \$17 to \$17.25 at New York; No. 2 \$16 to \$16.25; Southern car-wheel \$20 to \$20.50. At Philadelphia large transactions have been closed for forge at \$15 to \$15.50, and sales of special brands have been made at \$16. Good No. 2 is worth \$17, and No. 1 \$18.50.

In Western Pennsylvania mill irons are active at \$15.25 and Bessemer dull at \$18.25. Southern No. 1 foundry irons are selling in Ohio river valley markets at \$14.75 to \$15.50. At Chicago the same make is \$16.50. At Chattanooga and Birmingham confidence prevails and no fears exist as to any accumulation of stock for the rest of the year. From all quarters encouraging news is received as to the condition of business at the rolling mills, from the bar and sheet mills up to structural shapes and rails. Prices are strong, except where an exceptionally large order is to be placed. Enterprises calling for immense quantities are looming up. Railroad requirements are quite extensive, and car-builders have very lately been making requisitions for iron that will serve to keep prices strong. The sheet mills, wrought-iron pipe makers, merchant steel manufacturers and plate iron makers continue oversold. Agricultural implements, all manner of machinery and equipments and material for electrical and cable roads are called for even up to the extended producing capacity of the splendidly equipped establishments throughout the country. Business men look with satisfaction upon the early disposition of the tariff question, and are constrained to say in reference to the action of the Secretary of the Treasury in paying of bonds and anticipating interest, that it is a wise policy, to the extent at least of affording immediate and perhaps only temporary relief.

### HARDWARE.

The volume of trade continues satisfactory in general lines, the only exception being in imported goods, which on account of the prospective tariff changes, are in a very uncertain condition, it being impossible to determine the actual result, which, if borne out by present indications, will advance many goods to the point of prohibition. The items claiming the greatest interest of the hardware trade are cutlery and guns, stocks in both of which are lighter than for years past, and cannot, of course, be replenished pending the expected passage of the bill now under discussion. Many of the importers will either have to give up business altogether or add lines of American goods, and it is safe to say that no legislative act of recent years has been as generally obnoxious to importers as the one about to be passed. The market in home products remains firm, with the demand fully up to production, so that shipments are frequently delayed. Our correspondents all report a healthy feeling throughout the South, where the crop prospects have had no back-set, and every indication points to a season of great prosperity.

—AMERICAN—  
**Pig Iron Storage Warrant Co.**  
(Bank of America Building.)  
44 Wall Street, NEW YORK.  
Correspondence of Furnaces Invited.

**NASHVILLE RAPID TANNING**  
AND  
**BELT MANUFACTURING CO.**  
Manufacturers of Oak Tanned and Rawhide Leather Belting, Lace Leather, Picker Leather, Ropes, Lariats and other Rawhide Leather Goods.  
NASHVILLE, TENN.

**DIXON'S**  
**Silica Graphite Paint.**  
DURABLE AND BEAUTIFUL.  
Unaffected by heat or cold, dampness, salt air, rust, or even acids. For smoke stacks, boiler fronts, tin roofs, or metal work, this Paint is far superior to anything made. For details send for circulars.  
Joseph Dixon Crucible Co., Jersey City, N. J.

**PICKANDS, MATHER & CO.**  
**Pig Iron, Iron Ore and Coal.**  
Ferry-Payne Building,  
CLEVELAND, OHIO.

**EDWARD ALLEN,**  
**Practical Lead Burner**  
BALTIMORE, MD.  
Sulphuric Acid Chambers constructed on the latest improved plan. Strict attention given to the Lead Work of Concentrating Apparatus.  
P. O. BOX 214. ESTIMATES FOR THE ABOVE GIVEN.

### ARE YOU TROUBLED

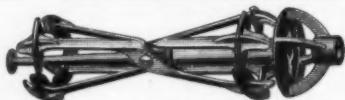
With odors in your kitchen, foul and impure air in your bath or living rooms? If so, examine the merits of

### EKSTROM'S VENTILATOR

And Stove-Pipe, Collar, Thimble and Holder Combined.

**CHENEY & HEWLETT,**  
207 BROADWAY, NEW YORK.

Send for Circular. Agents Wanted.



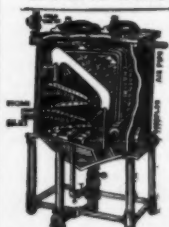
**THE FRONTIER MANUFACTURING CO.,** find as a result of two years of satisfactory trial that their

### PATENT LEVER FLUE CLEANER

is the best in the market. Why? Because the ends are protected from breakage by the button; its native flexibility entirely supercedes the old springs; the only cleaner with a follower to remove the refuse. Quicker and more easily adjusted than any other; better made; does better work; lasts longer.

**FRONTIER MFG. CO.,** Buffalo, N.Y.

**WEBSTER'S**  
**"VACUUM" EXHAUST STEAM ECONOMIZER**  
Is a Feed Water Heater and Purifier.



And is the most perfect device known for heating and purifying the feed water for steam boilers, preventing scale, and for heating buildings of any description, without tank pressure on engines, returning condensation to the boiler in the one apparatus. Readily cleaned without stopping machinery. All parts accessible. Furnished on Trial for Acceptance. New Illustrated Catalogue of convincing proof, free.

**WARREN WEBSTER & CO.,** Props.

491 E. Third St., Philadelphia.  
74 Courtlandt St., New York. 129 La Salle St., Chicago.

## Philadelphia x Warehouse x Company,

No. 235 Dock Street, Philadelphia.

**CAPITAL, \$1,000,000, FULL PAID.**

This Company makes advances upon Pig Iron stored at Furnaces (storage charge being nominal) or in Public Warehouses, upon reasonable terms. Particulars upon Application.

F. M. POTTS, Sec. and Treas. R. H. PILE, Superintendent. BEAUVEAU BORIE, Vice-President. HARRY F. WEST, President.



**The "Original Candy"**

Sewed Cotton Duck Belting. Especially adapted for Main Drivers, Saw Mills, Cotton Gins, Cotton Presses, and for all places where belts are subjected to moisture or atmospheric changes, the "CANDY" stands paramount.

For further information, prices, etc., write  
**The Candy Belting Co.**  
BALTIMORE, MD.

SOUTHERN AGENTS: Smith & Courtney, Richmond, Va. Atlanta Rubber Co., Atlanta, Ga. Baker, Sloss & Co., New Orleans, La.



The Only Manufacturers of Raw Hide Belting in the Country.

## The Chicago Rawhide Mfg. Co.

—MANUFACTURERS OF—  
**RAWHIDE BELTING, LACE LEATHER,**  
—ROPE, LARIATS, FLY-NETS,—

Picker Leather, Stock and Farm Whips, Washers, Hame Straps, Hame Strings, Halters and other Rawhide Goods of all kinds, by Krueger's Patent.

This Belting and Lace Leather is not affected by steam or dampness; has more grip than any other; never becomes hard; is stronger, more durable and the most economical Belting made. Especially adapted for the Southern trade on account of its resistance to moisture. The Rawhide Rope for Round Belting Transmission is SUPERIOR TO ALL OTHERS.

73 and 75 OHIO STREET, CHICAGO, ILL.

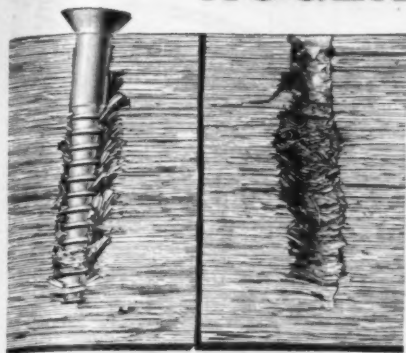




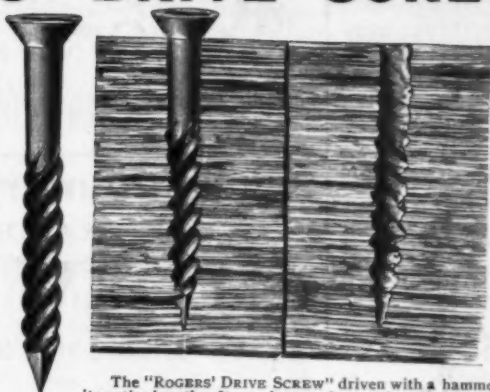
# AMERICAN SCREW CO., PROVIDENCE, R. I.

## "ROGERS' DRIVE SCREWS."

Patented May 10, 1887; July 29, 1887;  
July 29, 1888. Other patents pending.



A common cut thread screw as ordinarily inserted—i. e., driven two-thirds of its length with a hammer and the balance with a screw driver. Fibres of the wood are necessarily broken, and the holding power of the screw much impaired.



The "ROGERS' DRIVE SCREW" driven with a hammer its entire length. It revolves as it goes in and does not break the fibres of the wood, but makes its own nut of the cavity it forms.

WIER & WILSON, Agents, Baltimore, Md.

The foregoing illustrations speak for themselves, but we call attention to a few advantages of the "ROGERS' DRIVE SCREWS."

1. Stiffness, adapted for driving with a hammer.
2. Rapidity of insertion.
3. Increased holding surface.
4. Ability to be driven with hammer and withdrawn with screw driver numerous times from same hole.
5. Superior head, which will withstand blows of a hammer and not impair the slot.
6. Improved slot, admitting the use of a heavier screw driver.
7. A Rogers' Drive Screw of small diameter will hold as much as a common screw of a larger diameter.

Discount 66 2/3 per cent. from list of common screws.

## PROVIDENCE BELTING COMPANY,

MANUFACTURERS OF

**Leather Belts, Loom Straps, Pickers, &c.**

EXCLUSIVELY SHORT-LAPPED BELTS.

ROLL COVERING FOR WORSTED MACHINERY.

SEND FOR PRICES.

37 & 39 Charles Street, PROVIDENCE, R. I.

### VAILE & YOUNG'S Patent Metallic Skylights.



Without Putty.  
Construction adapted to all forms and styles of Skylights. Thousands of feet in use have proved its superiority. Particularly adapted for Depots, Mills, Factories, etc., where large and continuous lights are required. Send for illustrated catalogue.

309 & 311 NORTH STREET, BALTIMORE, MD.

### VENTILATORS



Made of galvanized iron and copper. Strong up and draft. Exhausts foul air, odors, gases, steam, etc. from mills, stores and dwellings. Cures smoky chimneys. Perfectly storm-proof. Galvanized iron and copper cornices and gutters. Sheet metal work for buildings. Send for illustrated catalogue.

E. VAN NOORDEN & CO.,  
263 Harrison Ave., BOSTON, Mass.

### THE ACME ARCHED STEEL EAVE TROUGH HANGER.

PATENT PENDING

GUARANTEED  
THE STRONGEST AND BEST  
IN THE  
MARKET.



### THE STANDARD Eave Trough Hanger

PATENTED  
MADE OF BEST GALVANIZED  
STEEL WIRE.

CHEAP, STRONG,  
AND  
DURABLE.

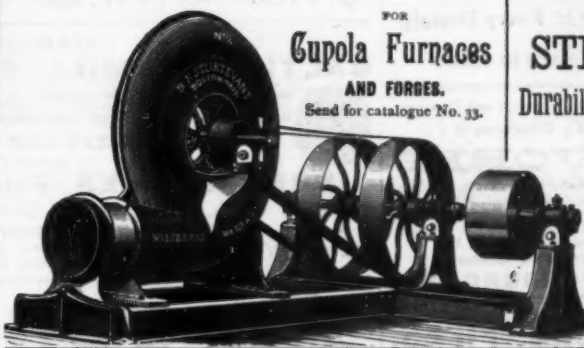
For Price List, address  
**THE CANTON STEEL ROOFING CO.,**  
CANTON, OHIO.  
SOLE OWNERS AND MANUFACTURERS.

## B. F. STURTEVANT,

PATENTEE AND SOLE MANUFACTURER OF

### THE STURTEVANT Steel Pressure Blower

FOR  
Cupola Furnaces  
AND FORGES.  
Send for catalogue No. 33.



### IMPROVED Portable Forges,

COMBINING  
STRENGTH,  
Durability, Simplicity & Convenience.

Send for catalogue No. 31.

B. F. Sturtevant,  
BOSTON, MASS.

34 OLIVER STREET.

BRANCHES:  
97 Liberty St., N. Y., 31 N. Canal St., Chicago.  
W. R. Burgess, Agent, Greensboro, N. C.



Supplies for —

FLOUR MILLS, GRAIN ELEVATORS  
COTTON SEED, LINSEED OIL MILLS  
SUGAR REFINERIES, STARCH  
CEMENTWORKS, RICE MILLS, etc.

**CALDWELL & SONS**  
CONVEYORS  
131 & 133  
WEST WASHINGTON ST.  
CHICAGO ILL.

## RICHMOND CITY MILL WORKS,

RICHMOND, INDIANA,

MANUFACTURERS OF

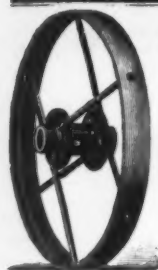
## FLOUR MILL MACHINERY

IN ALL ITS BRANCHES

A Majority of the Best Flour Mills in the South Equipped by this Company.

CORRESPONDENCE SOLICITED.

**BUY Cheapest FROM STEEL WRITE**  
RAILINGS, GATES, POSTS, CRESTINGS, JAILS, ROOFS, STAIRS, Lintels, Sills, &c. Cast Columns, Saw Mills, All sizes. Improvements.



**THE HOWELL WHEEL CO.**  
COVINGTON, KY.

MANUFACTURERS OF  
**METAL WHEELS,**

For Agricultural Implements.

Trucks, Wheelbarrows, &c.

SPICER IS ALL RIGHT.

SO IS HOAG.



Covert Manufacturing Co., West Troy, N. Y.

**OHATTANOOGA FOUNDRY & PIPE WORKS.**

DAVID GILES, Pres. C. B. IBESTER, Vice-Pres. M. LEWELLYN, Secy. and Treas.  
Successors to D. GILES & CO., Chattanooga, Tenn., Manufacturers of



Also Castings and Pat-  
terns of Every Descrip-  
tion made to order.

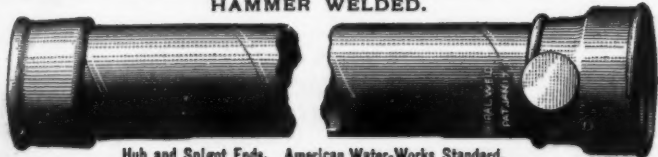
H. E. McWANE, President and General Manager. W. D. CAMPBELL, Secretary and Treasurer  
**THE CLAMORGAN COMPANY, Proprietors of**  
**HILL CITY PIPE WORKS**



Manufacture all kinds of Blast  
Furnace, Coking and Mining Ma-  
chinery: Boilers, Engines, Tram-  
way and Construction Car Castings  
and Tobacco Machinery, &c.  
Prices on application.  
**LYNCHBURG, VA.**

**SPIRAL WELD STEEL PRESSURE PIPES.**

HAMMER WELDED.



Hub and Spigot Ends. American Water-Works Standard.  
Practical for Water, Gas, Steam or Air, under Light or Heavy Pressures.  
**STRONGER, LIGHTER, CHEAPER** than any other Pressure Tubes manufactured.

**THE SPIRAL WELD TUBE CO.,** 43 John Street, New York.  
COUPLINGS FOR ALL USES.

S. E. NOBLE, Pres. JOHN E. WARE, Sec. and Treas. R. F. CARTER, Supt.

**ANNISTON PIPE WORKS**

ANNISTON, ALA.

MANUFACTURERS OF



Special Castings, General Castings and Machine Work.

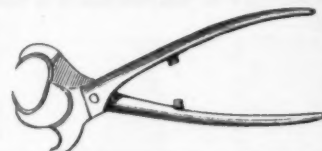
Advertise in the Manufacturers' Record.

**Attention, Hardware Dealers.**

Send for Circular and Price List of the  
**WOLVERINE HOG RINGER, the Best Ringer on the Market.**



HOG  
PIG



THE WOLVERINE  
Hog Ringer Rings  
MANUFACTURED BY  
HEISEN BROS. & CO., Tecumseh, Mich.

**Salem Foundry & Machine Shop**  
—SALEM, MASS.—

**ELEVATORS,**

—AUTOMATIC HATCH DOORS, AUTOMATIC LOCK GATES.—

Send for Illustrated Circular.

**WIER & WILSON,**

DIRECT REPRESENTATIVES:

HUBBARD & Co., Axes, Shovels, Hoes and  
Saws.  
AMERICAN SCREW COMPANY, Screws, Bolts,  
Wire Nails, &c.  
A. FIELD & SONS, Tacks and Nails.  
WHEELING HINGE COMPANY, Wrought  
Goods, Butts, &c.  
L. D. FROST & SONS, Philadelphia Car-  
riage Bolts.  
JOHN SOMMERS' SON, Faucets.  
NICHOLSON FILE CO., Files.  
HARTFORD HAMMER CO., Hammers and  
Sledges.  
THE HENRY C. HART MFG. CO., Screen  
Frames, Spring Hinges, &c.  
SHEBLE & KLEMM Forks.  
HOLROYD & Co., Stocks and Dies.  
CLARK BROS. & Co., Bolts, Nuts, etc.

BRANFORD LOCK WORKS.  
WHITE MOUNTAIN FREEZER CO.  
BLAIR MFG. CO., New, Easy and Bay State  
Lawn Mowers.  
WINCHESTER HANDLE CO., Fork, Shovel,  
Hoe Handles.  
SAMSON CORDAGE WORKS, Braided Sash  
Cord, etc.  
OLD DOMINION IRON & NAIL WORKS CO.  
Walker's Horse and Mule Shoes.  
PLUME & ATWOOD MFG. CO., Copper  
Rivets, Jack Chains, Lamps, etc.  
JOHN C. SCHMIDT & Co., Trace & Coil Chain.  
EXCELSIOR HOOK & BACK BAND CO.  
NEW SCOTT MFG. CO., Fruit Parers, etc.  
KLINE, LOGAN & Co., Picks, Mattocks, etc.  
RIVER FOUNDRY CO., Lull & Porter Hinges,  
Pulleys, etc.

OFFICE—No. 14 W. German St., BALTIMORE, MD.

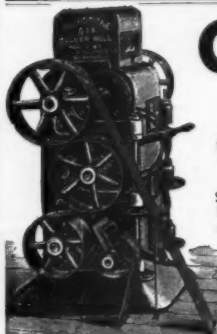
ESTABLISHED 1847.

**BALTIMORE MILL FURNISHING WORKS.**

**B. F. STARR & CO.**  
BALTIMORE, MD.

MANUFACTURERS OF  
**BURR STONES FOR ALL PURPOSES.**

Portable Mills, Roller Mills, Smut Machines, Shafting, Pulleys,  
Gearing and General Mill Machinery.  
Importers of Belting Cloths and General Mill Furnishings.  
The Leading Mill Furnishing House on the Atlantic Seaboard.



**CORN MILLS.**

The "KEYSTONE" Six-Roller  
Corn and Feed Mill.

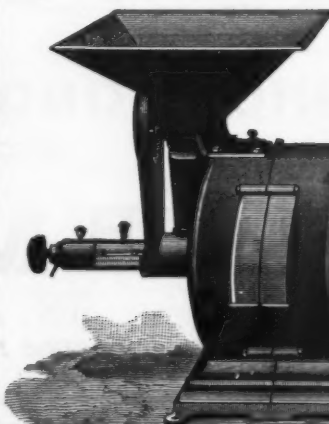
Entire Belt-Drive. Absolutely Positive Differential. Simultaneous  
Setting by the Movement of one Lever. Independent Tightener on Both  
Belts. Automatic Vibratory Feed. Perfect Alignment of Fixed Rolls.  
Absolutely Dust Tight. Light Running. Practical Instantaneous Tra-  
ining. Rolls Removed With Great Facility.

ADDRESS

**THE J. B. ALLFREE CO.**

76 to 86 Shelby Street, Indianapolis, Ind.

**FRENCH BURR MILLS,**

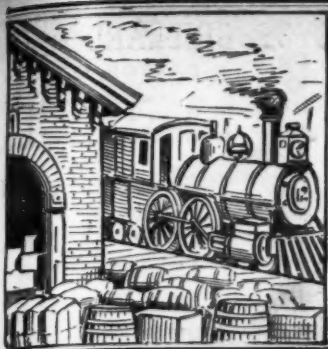


These Mills are especially adapted to the South-  
ern trade for making Fine Meal. They are  
guaranteed to be the best mills manufactured for  
grinding Oil Cake, Meal, Coprolites, Mineral  
Paint, Cement and Cotton Seed. Also the best  
and cheapest Cotton-Seed Huller ever  
offered to the trade. Write for particulars and  
samples of ground material. Address

**WALDRON & SPROUT,**  
Muncy, Pa.

Manufacturers of French Burr Mills, Flour Bolts, Corn Meal Sieves, Wheat  
Socours and Cleaners, Corn Ear Crushers, &c.





## When Can You Ship?

Is a question that turns up frequently in the course of our extensive daily correspondence. The answer, with a few exceptional cases, is—IMMEDIATELY.

**The Cincinnati Corrugating Co.**  
MANUFACTURERS

**Superior Iron & Steel Roofing, &c.**  
Box 226, PIQUA, O.

**HOLTON IRON ROOFING**  
**CEILING & C.**  
**ROOFING SIDING.**  
**NEW LISBON, O.**  
AGENTS WANTED EVERYWHERE

**SYKES' IMPROVED**  
Best Roof in the World.  
Suitable for all classes of buildings.  
Easy put on.

**SYKES' PATENT**

All my Iron and Steel is re-rolled and box annealed, well painted on both sides with the Best of Paint and Pure Linseed Oil.

**SYKES IRON ROOFING CO., NILES, OHIO.**  
Send for Circular and Price List, and mention this paper.

**THE BERGER MANUFACTURING COMPANY, CANTON, O.**

**BERGERS LOCK SEAM STEEL ROOFING**

**DON'T** make arrangements for ROOFING 'till you have seen ours.

It Excels all other Metal Roofs.

**The Kanneberg Roofing Co., Canton, O.**

(The Originators of Strictly Genuine Steel Roofing.) MANUFACTURERS OF

**THE KANNENBERG PATENT,**  
Latest Improved  
Folded Lock Seam,  
Strictly Genuine Steel Roofing.

Write for Catalogue, Price List and Samples.

**CORRUGATED IRON,**  
(FOUR SIZES OF CORRUGATIONS.)  
Crimped Edge Iron Roofing and Siding, Beaded Iron Siding and Ceiling, Water Proof Building Paper, Ready Mixed Paints, Etc.

## METAL ROOFING, SIDING AND CEILING.

FIRE-PROOF SHUTTERS AND DOORS.

**SHEET IRON AND SHEET STEEL,**

**Corrugated, Black, Painted & Galvanized.**

Don't buy without sending for our Prices and Catalogue.

**WHEELING CORRUGATING CO., Wheeling, W. Va.**

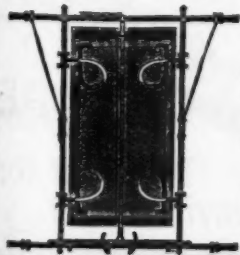
**LOWE & TUCKER, Chattanooga, Tenn.**

— DEALERS IN —

**Pig Iron, Iron Roofing,**

**RAILROAD AND FURNACE SUPPLIES.**

## OUR NEW EXTRA LONG No. 5 FOR TOP BUGGIES.



Combines ALL that is desirable. They are made of the finest crucible "fork" steel, and tempered by our improved lead and oil process.

We will, for a short time, sell these springs at a price far below any good spring in the market.

Write for prices and terms.

**HOLLIS SPRING CO.**

OLEAN, N. Y.

## CORRUGATED IRON The CAMBRIDGE ROOFING CO.

Manufacturers of Crowl's Patent Steel

AND ALL STYLES

IRON AND STEEL

**ROOFING**

SIDING & CEILING.

**ROOFING**

CAMBRIDGE, O.

## "QUICK-LAID" STEEL ROOFING.

Does away with labor required by others; Makes Roofing Profitable; has no exposed nails, rivets or cleats; is packed in patent packages which protect it in shipping. It pleases all who use it.

— MANUFACTURED BY —

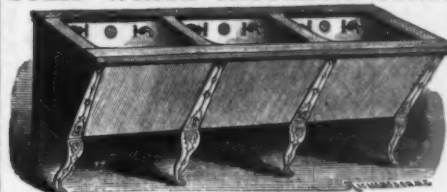
**HEBERLING METAL ROOFING COMPANY, HAVANA, ILL.**

**STEWART CERAMIC COMPANY,**

312 PEARL STREET, Corner Peck Slip, NEW YORK.

SOLE MANUFACTURERS, UNDER MORAHAN'S PATENTS, OF THE CELEBRATED

**SOLID WHITE CROCKERY STATIONARY WASH TUBS.**

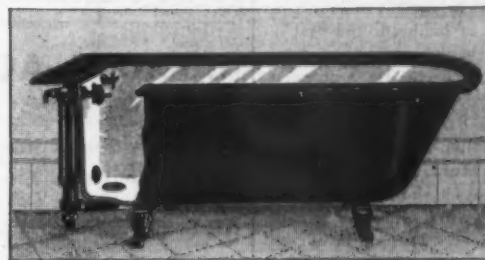


SHOWING THREE TUBS SET UP.  
Liberal Terms to the Trade. Send for Price List and Catalogue.

The Only Perfect Sanitary Tube now in Existence. Very Strong. No Seams to Open. Absolute Cleanliness secured for all time. Well Glazed. Will not Absorb, Leak or Decay. The only Solid White Crockery Wash Tub ever made in the world. Do not buy imitations until you see the genuine "Morahan's Patent" stamped on the front of every Tub. Washboard and Soap Cup moulded in every set. Will outlast any house. Solid White Crockery Rinks, comprising Butler's Pantry, Kitchen, Shop, Etc. Made of same material as the Tubs. Very strong, well glazed, no labor required to keep clean.

## Enameled French BATHS.

WITH PATENT SUPPLY AND WASTE.



SEND FOR NEW CATALOGUE.

**HAINES, JONES & CADBURY CO.**

MANUFACTURERS OF AND DEALERS IN

**Plumbers' Supplies and Sanitary Specialties,**

1136 RIDGE AVENUE, PHILADELPHIA, PA.

## MILNER & KETTIG,



**BIRMINGHAM, ALA.**

WRITE FOR CATALOGUE AND PRICES.

Prices guaranteed as low as any house in this line in the United States.

## Write us LATEST IMPROVED SLIP JOINT EAVE TROUGH,

LONGEST IN THE WORLD, GOES TOGETHER EASILY, NO SOLDER REQUIRED. BEST CONDUCTOR, HANGERS, STRAINERS, ETC.

MADE BY **THE CANTON STEEL ROOFING CO., CANTON, O.**

PAT'D 1889

## Eastern Lumber Markets.

[Special Cor. MANUFACTURERS' RECORD.]

NEW YORK, September 9, 1890.

Labor agitations have interfered much less with the lumber business than we feared. Retailers report very little diminution in demand. Wholesalers have been receiving large consignments from the West, ordered some time ago. New work is springing up, and the fall will be a very busy season as soon as people understand each other better as to where the rights of the laborer ends and the employer's begins.

A careful review of the situation justifies strong views and opinions. No one talks about an overcrowding of this market. Of course it would be easy to deluge us and other Northern markets with lumber, but the lumber business is too well organized for that. The Central strike has spent its force. Other roads were threatened, but the failure in this instance led to the abandonment of forcible or arbitrary measures just at this time.

The yellow pine people along the South Atlantic coast and to a considerable distance inland have been putting in a good deal of machinery, and have prepared to develop a good deal of new timber land for this and other markets. While this is all right, it would be well to effect something of an organization among these newer people, not to control or restrict them, but to make it possible to handle the increased output of lumber to the best interests of the Southern trade at large. There is more in efficient trade organization than many men who have never tried it are inclined to believe. The difference between organization and the absence of it is often 10 per cent.

The last few days have brought out large transactions in yellow pine for coming building operations. Two or three railroad companies have bought largely. Several who'salers have extended their engagements. Our Southern friends are pleased with the way things are going. Car shipments are growing. Local consumption is, of course, increasing. Prices for all kinds are firm, including rough and dressed North Carolina stuff. Well kiln-dried lumber goes quickly. We note increasing calls for it in the interior, where comparatively little has gone heretofore.

Poplar is holding its own in spite of some outside sales below standard quotations. Quartered oak arrivals are about enough to keep customers supplied and stocks at a safe point. We have had a good deal of cherry offered, and have taken every board. Ash has declined a little and large lots have been ordered. Birch is taken quite frequently, and so is maple. Quite a number of dealers are looking up supplies of miscellaneous woods, such as hickory, chestnut, red wood and a dozen others. The mahogany dealers expect to do a very large business in the near future. The walnut log exporters are hunting up supplies to hold for emergencies. Capital is seeking building chances. Prospects on the surface, at least, were never better.

**DO YOU BELIEVE IN SIGNS**

**JORY & CO.**  
Make Everything in  
**SIGNS**  
Baltimore & Light Sts.  
BALTIMORE.

**McShane & Bell Foundry**  
Pits, Iron and Brass Castings Made to Order.

Manufacture those celebrated Bells for Tower Clocks, Court-Houses, Cotton Mills, Factories, &c. Prices and catalogue sent free. Address  
**H. McSHANE & CO.**  
Baltimore, Md.  
Mention this Paper.

**THOMAS J. SHRYOCK & CO.**  
**YELLOW PINE COMMISSION MERCHANTS.**  
Correspondence Solicited.  
BALTIMORE AND WASHINGTON.

**E. B. HUNTING & CO.**  
BALTIMORE, MD.  
JACKSONVILLE and FERNANDINA, FLA.  
and SAVANNAH, GA.

WHOLESALE MERCHANTS  
AND MANUFACTURERS OF  
**Yellow Pine Lumber**

Buy for cash on cars at Mills and sell delivered to all points reached by rail or water. Write Baltimore Office.

**LANDS! LANDS!**  
TIMBER LANDS in large and small tracts in East Texas, Louisiana and West Arkansas. TOWN LOTS and houses in the booming, solid town of ALEXANDRIA, LA.  
**H. M. LOOMER & CO.**  
Land Dealers, Alexandria, La.

**A BARGAIN.**  
FOR SALE at one-half of its real value, a complete outfit of Planing Mill,  
**SASH, DOOR AND BLIND MACHINERY.**  
Including 35 horse-power engine and boiler, with everything necessary for a first-class establishment. Second-hand but in good condition. Address **L. S. COLBURN**, 87 Prospect Street, Cleveland, Ohio.

**600,000 ACRES**  
OF  
North Carolina Timber and Agricultural Lands  
**ARE OFFERED FOR SALE**  
BY  
"The Real Estate Investment Co."  
of Wilmington, N. C.

On these six hundred thousand acres will be found the best game preserves now left in the United States. Many tracts of this land are of great value, and they will be sold in a body or separately at reasonable prices which cannot fail to give to investors a large profit.

For further information apply to

**CHARLES M. STEDMAN, Prest.**  
WILMINGTON, N. C.

### Wooden Steam Tanks FOR SALE.

**4 LARGE WOOD STEAM TANKS,**  
10 feet long, 4 wide, 4 high, made of 4-inch white pine plank, fitted 1 1/2 inch perforated. Wrought iron steam pipe on bottom, sides and ends. Suitable for boiling purposes.

**2 HOLLOW IRON CRANES,**  
10 to 12 feet high, 10 to 12 feet long, 7 inches wide, with all necessary attachments to set them up, and chains to work inside for hoisting purposes.

**HOUGHTON PACKING CO.**  
BALTIMORE, MD.

**Valk & Murdoch Iron Works,**  
CHARLESTON, S. C.  
**ENGINES and BOILERS,**  
Machinery for Complete Fertilizer Works, Rice Mills, &c.

**JOHNSON, SHRYOCK & CO.**  
**HARDWOOD COMMISSION MERCHANTS.**  
Correspondence Solicited.  
Office, - Shryock Building,  
BALTIMORE.

**MORGAN'S IMPROVED**  
**Steam and Hot Water Boilers,**  
For WARMING City and Country Residences, Hotels, Schools, Churches and Public Buildings. Send for Catalogue.  
**THE D. F. MORGAN BOILER CO.,** Akron, O.

**Gem Spring Hinges.**  
FOR SINGLE AND DOUBLE ACTING. SCREEN, MEDIUM AND HEAVY DOORS.

For Doors.	Length of Flanges.	Japanese Single Acting.	Japanese Double Acting.	Copper Branded Single Acting.	Copper Branded Double Acting.
Feet.	Inches.	pr.	pr.	pr.	pr.
6x2 3/4	10 1/4	3 1/2	\$0 70	\$1 40	\$2 00
7x2 1	10 1/4	4	0 90	1 75	2 50
7x2 1/2	10 1/4	5	1 10	2 20	3 00
7x2 3/4	10 1/4	6	1 40	2 80	3 75
8x2 1/2	14 1/4	7	1 75	3 50	4 50
8x3 1/2	14 1/4	8	2 50	5 00	5 50
9x3 1/2	14 1/4	10	3 50	7 00	7 50
10x3 1/2	14 1/4	12	4 50	9 00	10 00

MANUFACTURED BY  
**VAN WAGONER & WILLIAMS CO.,** New York.  
Send for April (1880) Catalogue

### COMBINED ANVIL AND VISE. HARDENED FACE, STEEL JAWS. 5 SIZES--from 10 to 75 pounds.



Anvil and Vise can be used independent of each other. Illustrated Catalogue to all applicants, but discount to Trade Only.  
**HOLT MANUFACTURING CO.,**  
1018 & 1020 First Av., Cleveland, O.

**Bates' Hand Elevators**  
Pat. April 18, 1871. Released July 25, 1876.  
OVER 6,000 IN USE.

Adapted for Warehouses, Stores, Factories, Hotels, Public Institutions and every place where merchandise, &c. is transferred from one story to another.

**JAMES BATES,**  
PATENTEE,  
Nos. 1, 3 & 5 President Street, BALTIMORE.

**The Jeffrey Mfg. Co.**  
121 W. State St., Columbus, O.  
MANUFACTURERS OF  
DETACHABLE CHAIN BELTING  
DESIGNED FOR  
**Elevators, & Conveyers,**  
**DRIVING BELTS**  
For Handling Barrels, Boxes, Bales, Grain, Coal, Ores, &c.  
Illustrated 1890 catalogue sent on Application.  
Correspondence solicited.

**JOYCE, CRIDLAND & CO.**  
DAYTON, O.  
MANUFACTURERS OF  
**J. O. Joyce's Patent Lever Jacks,**  
Compound Lever & SCREW JACKS.  
AND BENCH VISES.  
50 varieties of Lever and Screw Jacks for railroad use.  
Please send for illustrated catalogue.

**COTTON SEED OIL MILLS.**  
From 5 to 50 tons daily capacity.  
THESE MILLS HAVE ALL THE MODERN IMPROVEMENTS AND PRODUCE THE MOST SATISFACTORY RESULTS. SEND FOR PARTICULARS.  
ADDRESS **H. W. HUBBARD,** ATLANTA GA. OR DALLAS, TEX.

**GLOBE**  
STANDING SEAM IRON ROOFING & CORRUGATING CO.  
CINCINNATI, O.  
MANUFACTURERS OF SUPERIOR GRADES

**CORRUGATED IRON & STEEL**  
ROOFINGS SIDINGS AND CEILINGS.  
CORRESPONDENCE SOLICITED WITH DEALERS OR THOSE CONTEMPLATING BUILDING ESTIMATES AND PRICES FURNISHED PROMPTLY.

**Richmond Iron-Paint Co.**  
WEATHERPROOF WATERPROOF AND FIREPROOF.  
Never Cracks, Blisters or Peels. Especially adapted for Tin, Zinc, Copper, Iron, Shingles and Board Roofs.

**R. T. PATE AND COMPANY**  
RICHMOND IRON PAINT  
TRADE-MARK  
87% PER-CENT IRON  
PAT'D SEPT. 30, 1878.  
No. 7, 107.  
DAMP AND IMPERFECT WALLS ARE ALSO RENDERED DRY BY THE USE OF THIS PAINT AND CEMENT.  
**N. T. PATE & CO.,** 1007 E. Cary St., Richmond, Va.

**PURE WATER FROM IRON RUSTLESS PIPES**  
The best for conveying water.  
MADE BY THE  
**WELLS RUSTLESS IRON CO.**  
52 JOHN STREET,  
NEW YORK CITY.  
BUY AND SELL Second-hand Saw, Shave, Heading, Shingle, Hoop Mills, Engines, Boilers, Churns and Ice Machinery, for U.S.A. Address Box 114, Cleveland, Ohio.



**S. E. CRAWFORD,**  
NORWALK, OHIO.  
MANUFACTURER OF  
**Rubber Bucket Chain**  
And Wood Force Pump Supplies.  
Correspondence Solicited.

**THE COOK WELL CO.**  
CONTRACTS TAKEN FOR FURNISHING  
**WATER SUPPLY**  
COOK'S SYSTEM OF WELLS.  
18 YEARS EXPERIENCE IN WELL SINKING  
FOR WATER WORKS, RAILROADS,  
FACTORIES, BREWERIES ETC.  
ARTESIAN WELL PUMPS ETC.  
TUBE WELL SUPPLIES  
SEND FOR CATALOGUE OF PATENT WELL MATERIALS

We have erected  
**STAND PIPES**  
At the following Places:

Kankakee, Ill.,	20X124
Corwall, Ontario,	20X120
Salisbury, N. C.,	20X100
Washington, Ind.,	20X100
Beaver Dam, Wis.,	20X84
Waterford, N. Y.,	20X52
Berwick, Pa.,	11X45
Homer, N. Y.,	25X49
Cobourg, Ontario,	16X116
Marshall, Mich.,	20X100
Hamburg, N. Y.,	16X125
Canton, N. Y.,	20X72

**SHARON BOILER WORKS,**  
(Limited.)  
SHARON, PA.

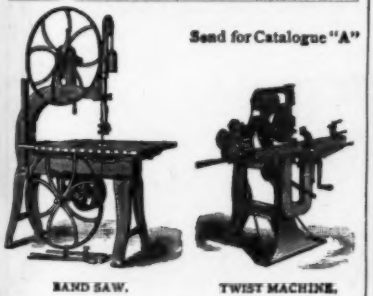
**REYNOLDS BROS.**  
HAND CUT  
**FILES**  
COLUMBUS, O. AND FOR PAINT LIST.

**INDIANA MACHINE WORKS**  
FORT WAYNE  
INDIANA  
BUILDERS OF  
**WOOD WORKING  
MACHINERY.**  
WRITE FOR DESCRIPTIVE CIRCULARS.

FOR THE BEST AND  
LOWEST PRICED  
**GANG LATH MILL**  
AND BOLTER COMBINED  
ADDRESS  
**B. S. ABBOTT**  
CLEAN, N.Y.  
Please mention this paper.

**THE BEST MILL BUILT.**  
Send for circular.  
**\$200**  
**\$250**  
**Richmond Machine Works**  
Richmond, Ind.

Send for Catalogue "A"



**HAND SAW.** **TWIST MACHINE.**

**P. PRYIBIL,**  
518 to 524 W. 41st Street, New York City.  
MANUFACTURER OF SUPERIOR

**Wood-Working Machinery**  
SHAFTING, PULLEYS AND HANGERS.



**HOSE**  
Christie & LeCount, 351 Canal St., N.Y.  
MANUFACTURERS OF  
**FIRE HOSE.**  
All Appliances for Fire Protection for  
Cities or Mills. General Mill Supplies.  
Send for illustrated circulars.

**W. J. CLARK & CO., Salem, O.**  
MANUFACTURERS OF  
**Elevating & Conveying Specialties**  
Sole Manufacturers of the "SALEM" ELEVATOR  
BUCKET, for Mill and Elevator work, Ear Corn,  
Corn and Cobs, Ores, Coal, Broken Stone, &c.  
Send 9 cents (stamps) for postage on Sample  
Salem Bucket and Illustrated Catalogue.

**Hardware and Gun Trade: Quote our**  
**\$5 Clay Pigeon Trap.**  
Electrotypes furnished gratis for catalogues.  
Liberal commissions. 50-page book free. Address  
**LIGOWSKY CLAY PIGEON CO., CINCINNATI, O.**

**OILLESS BEARINGS.**  
They will run for years  
without oil. Perfectly  
clean. No cutting or  
danger of fire from  
overheating. Send for  
New Circular of interest  
to users of Loose  
Pulleys.  
**North American Metaline Co., 37 Blocker St., N.Y. City.**

**CORN MILL.**  
Best Corn and Cob  
Grinder in the World  
**ENGINES**  
**BOILERS**  
FOR ALL PURPOSES.  
Send for Catalogue  
**COMMON SENSE ENGINE CO.,**  
Springfield, Ohio.

**TALBOT'S PATENT**  
**PORTABLE**  
**CAR FLOOR.**

This floor is necessary for the  
safe transportation of stock. It is  
extensively used in the West and  
I desire to arrange for its manu-  
facture and INTRODUCTION IN THE  
SOUTH. Who will offer best in-  
ducements to manufacture it on  
royalty or to organize a company?

**D. H. TALBOT,**  
SIOUX CITY, IOWA.

**NO RUBBER**  
**REPAIRS.**  
**POWER HAMMER.**  
Belden Improved Upright  
  
**The Belden Machine Co.**  
NEW HAVEN, CONN.  
Send for Circulars.

**PENNSYLVANIA COKE**  
**GAS LIGHT CO.**  
THE BEST IN THE  
MARKET  
IMPROVED ROYAL  
BLANK GAS MACHINE  
NEW YORK  
105 NICHOLSON ST.  
COLUMBIA ST. PHILA.  
CONTRACTORS FOR LIGHTING CITIES  
AND WITH THIS COKE SYSTEM OF  
SELF-GENERATING GAS LAMPED SHOWN IN USE

  
**STICKNEY OIL BURNER**  
For Heating Soldering Coppers.  
Saves insurance premiums, decreases fire risks.  
Economical and reliable. Always ready for use.  
Write for circular D and special information.  
**STICKNEY OIL BURNER CO., Portland Me.**

THE DETACHABLE  
**EMPIRE SASH CORD FASTENER.**  
The simplest and best method of attaching Sash Cords  
to Window Sashes ever invented, and a great saving in  
time and patience in putting in or taking out Window  
Sashes. Every window requires them that is hung with  
weight.

  
OLD WAY NEW WAY  
IN POSITION

The sharp rib extending over the top of the fastener,  
through the centre, is, by the weight of the sash, caused to  
sink into the frame, and thus hold from moving.  
The most useful invention for Window Sashes ever put on the  
market. Every window requires them.  
Reason why you should use them: It costs less than one  
and one-half cents per Sash; requires no nails or screws,  
can be put in or taken out in less than one minute; pre-  
vents the knot from fraying out and pulling between the  
sash and frame; does not split the sash like nails or screws;  
prevents the cord from running back into the weight  
pocket. Manufactured by the  
**EMPIRE PORTABLE FORGE CO., N.Y.C.**

**ESTATE OF**  
**GEO. M. CRUICKSHANK,**  
Builder of  
**Stationary,**  
**Portable**  
—AND—  
**YACHT**  
**ENGINES.**  
Providence, R. I.  
— SEND FOR ESTIMATES. —

## IRON COTTON. LEATHER.

Goods made at the point both of production of the raw material and consumption of the  
manufactured article, with cost of making comparatively low, must return best profits.

**Bluffton, at the "IRON BLUFFS," Northern Alabama,**  
surrounded by furnaces making the best of foundry and car wheel iron; in a county producing  
10,000 bales of cotton; with large tanneries nearby, and with the great unoccupied market of the  
South and Southwest at its door, offers the above advantages to investors in manufacturing indus-  
tries, and will give liberal subsidies of land to support the stock of companies located there.

**LIBERAL AID TO SMALL INDUSTRIES.**  
Address **BLUFFTON LAND, ORE & FURNACE CO., Bluffton, Ala.**

Excursion train leaves Boston at 2 P. M., Friday, October 10th; Baltimore, about 5.30 A. M.,  
October 11th for a week's tour of the "New South," via the Shenandoah Valley, visiting Caverns of  
Luray and Natural Bridge and the leading cities and "boom towns" of the "New South."  
One whole day at the great mines of the "IRON BLUFFS" at Bluffton, Ala.  
Particulars from C. P. GAITHER, Agent East Tennessee, Virginia & Georgia Railroad, 299  
Washington Street, Boston, or JOHN C. FIELD, 1205 Myrtle Avenue, Baltimore.

**One Week in the "NEW SOUTH."**

## New Model Ball Typewriter.



The BEST STANDARD TYPEWRITER in  
the world. Cheap, portable, no ink ribbon, inter-  
changeable type in all languages, easiest to learn  
and rapid as any. Agents wanted everywhere.  
WARRANTED AS REPRESENTED. Send for Cata-  
logue and Specimens of Work. Address

**NATIONAL TYPEWRITER CO.**  
10 Temple Place, Boston, Mass. P. O. Box 5159



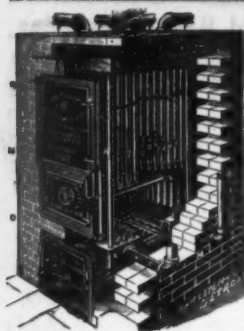
"IMPROVEMENT THE ORDER OF THE AGE"  
For 19 years all users of typewriters have felt the neces-  
sity of their being improved. You will find in the SMITH  
PREMIER TYPEWRITER the latest and best. All the  
essential features greatly perfected and important im-  
provements. The best instrument is not a mechanical  
skill have been employed to produce a machine of Greater  
Durability, Excellence of Design and Special Features.  
We claim, and inspection and trial prove it, the Best  
Durability in Alignment, Keel-Set Running and No-4 Silent.  
All type cleaned in 10 seconds without setting hands.  
Send for catalogue. THE SMITH PREMIER TYPE-  
WRITER CO., Syracuse, N. Y., U. S. A.

## THE SIMMERLY DERRICK.



This is a revolving Derrick which makes a  
perfect circuit from either right or left. It can  
be worked from a lighter or Steamer same as  
on solid ground. It is adapted for the hoisting  
of stone, iron ore, coal or any material, and can  
be used with or without the bucket. Capacity in  
one lift ranges from one to five tons. Further  
particulars on application to

**Simmerly Derrick Co.**  
101 Center Street, Cleveland, Ohio.



# BOLTON HOT WATER HEATER.

Best for Warming Dwellings, Greenhouses, Schools, Hospitals, Etc.  
Most Economical, Durable and Easily Managed  
Safe and Cleanly.  
Best Record for Years  
of Service in Canada and the Blizzard Northwest.  
The Favorite in the Mild Climate of the Gulf States.  
Its Vertical Circulation renders its action prompt and rapid. Its Fire Surface is the largest in proportion to grate surface.  
No Bolted, Flanged or Packed Joints, therefore cannot leak. Its Brick Casing prevents loss of heat in cellar.  
Made of Wrought Iron, therefore cannot crack.

**DETROIT HEATING & LIGHTING CO.**

88 Lake Street, CHICAGO.

359 Wight Street, DETROIT.

SEND FOR CIRCULARS.

**STANDARD RADIATORS,**

ALL SIZES.

Discounts to the Trade.



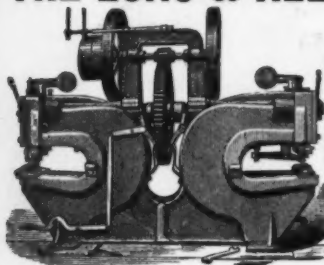
COMBINATION

**GAS MACHINE.**

BEST INDEPENDENT GAS APPARATUS  
for Country and Suburban Residences,  
Churches, Schools, Stores, Hotels, &c.  
Over 20 years in use with never an  
accident.

Average Cost of Gas 1/2 Cent per  
Hour per Burner.

## THE LONG & ALLSTATTER CO. HAMILTON, OHIO.



Heavy Double Machine.

Double, Single, Angle-Bar, Gang, Horizontal, Twin, Boiler, Spacing, Gate, Multiple, BELT and STEAM-DRIVEN

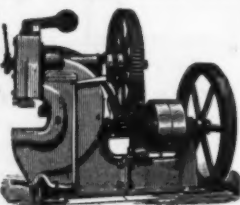
Punch & Shears.

Over 300 Sizes.

ALSO

Power-Cushioned

HAMMER.



Heavy Single Machine.

Send for New Catalogue.

## Laundry Machinery.

LARGEST STOCK.

LATEST IMPROVEMENTS.

FULLEST LINE.

Washing Machines,  
Ironing Machines,  
Centrifugal Machines,  
Mangles, Wringers, &c.  
BOILERS AND ENGINES.

—OUTFITS FOR—

Hotels and Public Institutions.

A SPECIALTY.

## THE A. M. DOLPH CO.

222 WASHINGTON STREET,  
CHICAGO, ILL.

40 CORTLAND STREET,  
NEW YORK.

COR. 9TH ST. & FREEMAN AVE.  
CINCINNATI, O.



## Niagara Stamping & Tool Company,

MANUFACTURERS OF

## Tinners' Machines & Tools,

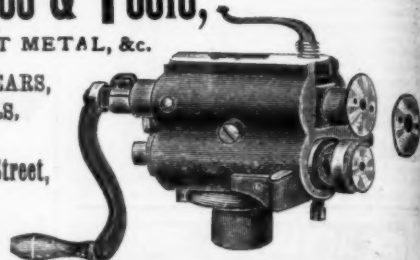
FOR WORKING SHEET METAL, &c.

SQUARING and CIRCLE SHEARS,  
FRUIT CAN DIES and TOOLS,  
CANNERS' OUTFITS.

Superior, Corner of Randall Street,

BUFFALO, N. Y.

Write for our catalogue and price list  
and mention this paper.



## The LLOYD BOOTH CO., Youngstown, Ohio.

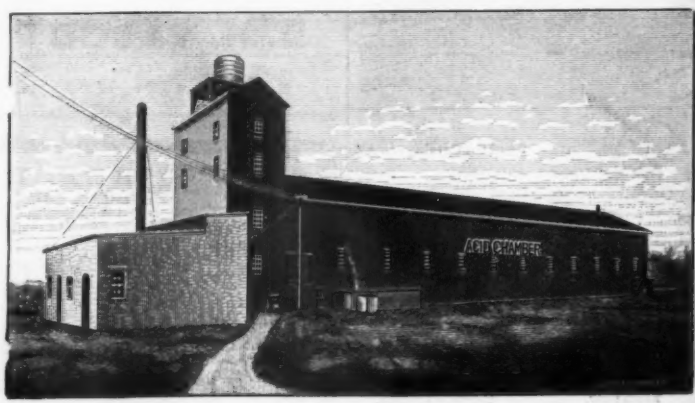
GUIDE,  
BAR,  
MUCK,  
SHEET  
AND PLATE  
MILLS.



SQUEEZERS,  
SHEARS,  
ORE MILLS,  
ROLL LATHES,  
SAND AND  
CHILL ROLLS.

## Manufacturers of IRON AND STEEL WORKS MACHINERY.

## Sulphuric Acid Chambers AND Acid Phosphate Works.



We are prepared to make bids to erect complete ACID PHOSPHATE WORKS and SULPHURIC ACID CHAMBERS in any part of the United States, or we will furnish complete designs and specifications.

## TOMPKINS, OLIVER & CO.

CHARLOTTE, N. C.

## R. M. WHITNEY,

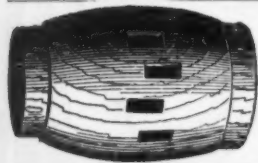
MANUFACTURER OF

## BLACK BIRCH HUBS.

OLEAN, N. Y., U. S. A.

These Hubs are made in sizes from 6x8 to 16x18 inches, and are especially adapted to dry climates.

Send for Circular and Prices.



## Waltham Emery Wheel Co., Manufacturers, WALTHAM, MASS.

By our various processes we can guarantee satisfaction for the greatest variety of work.

EMERY WHEEL MACHINERY,  
EMERY, CORUNDUM, Etc.

These wheels can be bought of our agents or ordered direct.



IRA DIMOCK, Pres.

Established 1867.

J. L. OTIS, Treas.

## Northampton Emery Wheel Co.

MANUFACTURERS OF

## Premium Solid Emery

AND  
CORUNDUM WHEELS,

AND ALL KINDS OF

## Emery Wheel Machinery.

LEEDS, MASS.

WESTERN BRANCH:

20 SOUTH CANAL STREET, CHICAGO, ILL.



## NORTON EMERY WHEEL CO.

MANUFACTURERS OF—

## EMERY and

## Corundum Wheels,

## Emery Wheel Machinery

AND NUMEROUS SPECIALTIES.



NORTON EMERY WHEEL CO.  
WORCESTER, MASS.

THOS. K. CAREY & BROS.

26 Light Street, Baltimore.

Southern Agents.



7-1  
RATES  
CHES.  
EC.  
r an  
t per

ny,



hlo.

RS,

HILLS,  
CHES.

D  
DILLS,

ERY.

S

KS.



ACID  
BERS  
plete

CO.





# Alphabetical Index of Advertisers.

[For "CLASSIFIED INDEX," SEE PAGE 2.]

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	<b>I</b>	<b>J</b>	<b>K</b>	<b>L</b>	<b>M</b>	<b>N</b>	<b>O</b>	<b>P</b>	<b>Q</b>	<b>R</b>	<b>S</b>	<b>T</b>	<b>U</b>	<b>V</b>	<b>W</b>	<b>X</b>	<b>Y</b>	<b>Z</b>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
Abbott, B. S. .... 71	Abner, T. C. & Son. .... 50	Adams, Austin. .... 31	Adams, T. C. & Son. .... 50	Allen, Edw. .... 56	Allentown Fdry & Mach. Co. .... 28	Alfrie, The J. B. Co. .... 48	American Gas Saving Co. .... 49	American Pig Iron Storage Warehouse Co. .... 66	American Pipe Mfg. Co. .... 66	American Screw Co. .... 67	American Supply Co. .... 68	Ammonite Pipe Works. .... 68	Ammonite Machine Mfg. Co. .... 68	Armstrong Bros. .... 32	Arnold, D. J. C. .... 39	Asphaltic Slag Paving & Roofing Co., The. .... 51	Aber & Wilkins. .... 43	Atlanta Machine Works. .... 57	Ault & Wilborg. .... 58	Austin, F. C. Mfg. Co. .... 34	Automatic Time Stamp Co. .... 37	Babcock & Wilcox Co. .... 32	Baker, Sloc & Co. .... 62	Baldwin Locomotive Works. .... 32	Baltimore St. & Light. Co. .... 38	Baragwanath, Wm., & Son. .... 32	Barrett, Geo. A. .... 64	Barnes, W. F. & John, Co. .... 64	Bar Pumping Engine Co. .... 46	Barry, W. B., Saw and Supply Co. .... 46	Bates, Jas. .... 70	Battle Creek Machinery Co. .... 46	Bay Line. .... 26	Beck, H. L. .... 26	Bedford City Land & Imp. Co. .... 26	Belden Machine Co. .... 71	Belt and Motor Co. .... 69	Berger Mfg. Co. .... 69	Bessmer, Ala. .... 25	Bickford Drill Co. .... 64	Big Stone Gap, Va. .... 52	Birdsall Co. .... 30	Blake Mfg. Co., The Geo. F. .... 30	Blakeslee Mfg. Co. .... 30	Blodgett Land, Ore & Furnace Co. .... 71	Boggs & Clarke. .... 30	Bomer & Bochert Press Co., The. .... 45	Boud, Pendleton, Meem & Co. .... 51	Boughton Eng. Co. .... 33	Boston, A. F. & Co. .... 57	Box 110, Cleveland. .... 70	Bradley Fertilizer Co. .... 61	Bradley & Co. .... 68	Bradstreet Co. .... 58	Brown, Alex., & Sons. .... 58	Brush Electric Co. .... 75	Budden & Son. .... 58	Buena Vista, Va. .... 32	Buffalo Forge Co. .... 76	Buffalo Scale Co. .... 3	Buffalo Steam Pump Co. .... 3	Bullock, M. C. Mfg. Co. .... 60	Bundy Mfg. Co. .... 54	Burgess, W. R. .... 31	Burton, W. J. & Co. .... 55	Bushnell, G. H., Co. .... 55	Burns, Jno. F. .... 30	Byram & Co. .... 30	Caldwell, H. W. & Son. .... 67	Calkins, W. P. & Co. .... 55	Cambridge Roofing Co. .... 19	Cameron, A. S., Steam Pump Wks. .... 29	Campbell Cotton Compress Co. .... 27	Canning, Reginald & Co. .... 27	Canton Saw Co. .... 48	Canton Steel Roofing Co. .... 67	Cardell, Jas. D., & Co. .... 57	Cardiff, Tenn. .... 13	Carlisle Mfg. Co. .... 44	Carter, Jno. S. .... 44	Cass Mfg. Co. .... 65	Cass Engine Works. .... 57	C. H. & D. R. R. .... 64	Chamberlin Mfg. Co. .... 64	Chambers Brothers Co. .... 59	Chandler & Taylor. .... 30	Chapman, F. J. .... 54	Charter Gas Eng. Co. .... 64	Chattanooga Fdry. & Pipe Wks. .... 68	Chattanooga Paint Co. .... 63	Chattanooga Wood Split Pulley Co. .... 66	Cheney & Hewlett. .... 66	Cheraw, S. C. .... 51	Chesapeake Belting Co. .... 66	Chester Steel Castings Co. .... 62	C. M. & St. P. Ry. .... 66	C. & C. R. R. Co. .... 66	Chicago Raw Hide Mfg. Co. .... 66	Chickasaw Iron Works. .... 76	Christiana Mch. Co. .... 30	Christie & Le Count. .... 71	Cincinnati Corrugating Co. .... 69	Cincinnati Screw & Tap Co. .... 63	Clark, Geo. F. .... 55	Clark, Jeremiah. .... 43	Clark, W. J. & Co. .... 71	Cleveland & Hardwick. .... 30	Cleveland Axle Mfg. Co. .... 76	Cleveland Elec. Mfg. Co. .... 49	Cleveland Gas Machine Co. .... 49	Cleveland Twist Drill Co. .... 47	Cobb, Thaddeus S. & Co. .... 55	Coe & Wilkes. .... 70	Colburn, L. S. .... 70	Colman Gas Lt. Imp. Co. .... 49	Collins, A. B. .... 64	Collins, Victor. .... 50	Common Sense Engine Co. .... 71	Connell & Dangler. .... 4	Consolidated Ice Machine Co. .... 57	Contractors' Plant Mfg. Co. .... 57	Cook Well Co. .... 71	Copeland & Bacon. .... 61	Cordeman, Meyer & Co. .... 46	Cory Car & Mfg. Co. .... 34	Corporation Boat & Engine Co. .... 35	Cortright Metal Roofing Co. .... 68	Covert Mfg. Co. .... 68	Cox, L. N. .... 74	Crawford, S. E. .... 71	Crompton Loom Works. .... 55	Cronk Hanger Co. .... 9	Curtis Regulator Co. .... 33	Cyclops Steel Works. .... 63	Dallas, Texas. .... 26	Davis, F. H., & Co. .... 30	Dayton Globe Iron Works Co. .... 29	Dean Bros. Steam Pump Works. .... 29	Deane Steam Pump Co. .... 4	Defiance Machine Works. .... 48	Deming Co. .... 28	Demson, Texas. .... 19	Derby & Kilmer Desk Co. .... 37	Detroit Foundry Equipment Co. .... 63	Detroit Heating & Lighting Co. .... 73	Diamond Prospecting Co. .... 64	Diets, Bernhard. .... 64	Dixon, Jos., Crucible Co. .... 66	Dolph, A. M., Co. .... 72	Dopp, H. Wm., & Son. .... 48	Draper, Geo., & Sons. .... 4	Drew, Baldwin & Co. .... 43	Dufur & Co. .... 64	Dunning, W. D. .... 43	Du Quoin Iron Works. .... 43	Dyott & Co. .... 68	Eagle Boiler Works. .... 32	Eastman Co. .... 36	Eaton & Burnett. .... 37	Eclipse Pump Mfg. Co. .... 37	Eddy, Chas. G. .... 51	Edison General Electric Co. .... 24	Edmonds & Robinson. .... 48	Egan Co., The. .... 48	Ehret-Warren Mfg. Co. .... 6	Empire Paint & Roofing Co. .... 6	Empire Portable Forge Co. .... 71	Employers' Liability Assurance Corporation, (Limited). .... 4	English, C. R. .... 55	Estate of G. M. Cruickshank. .... 71	Estep, F. .... 44	E. T., V. & G. Ry. .... 3	Evans Friction Cone Co. .... 3	Fay, J. A., & Co. .... 47	Feld, Jno. C. .... 24	Fitzsimons & Co. .... 24	Fletcher & Thomas. .... 50	Floos Manufacturing Co. .... 64	Forest City Brass Works. .... 33	Forrester, S. C., Machine Co. .... 63	Foundry & Machine Department Harrisburg Car Mfg. Co. .... 33	"F. P. S." Co. .... 36	Frank & Co. .... 36	Freese, E. M. & Co. .... 52	Frey-Schickler Co. .... 52	Frick Co. .... 30	Friscobello Mill Co. .... 61	Frits, Geo. J. .... 61	Frontier Mfg. Co. .... 66	Front Royal and Riverton, Va. .... 21	Pulton Steam Boiler Works. .... 32	Pulton Iron & Engine Works. .... 76	Gambrell, C. A., Mfg. Co. .... 54	Gandy Belting Co. .... 66	Garlock Packing Co. .... 66	Gates Iron Works. .... 60	Gerlach, Peter & Co. .... 48	Glenamoran Co., The. .... 68	Glen Cove Machine Co., (Lim.). .... 46	Globe Machine Co. .... 31	Globe Iron Roofing & Cor. Co. .... 70	Globe Machine Works. .... 54	Godfrey & Co., L. .... 44	Goodell & Waters. .... 47	Goodhart, P. J. & Co. .... 36	Goodrich Trans. Co. .... 36	Gordon, Strobel & Laurean (Lim.). .... 34	Goulds Mfg. Co. .... 30	Graham, Bailey & Co. .... 49	Graham, J. S., & Co. .... 48	Gray & Fitch. .... 45	Grottoes Co., Va. .... 47	Haines, Jones & Cadbury Co. .... 69	Harriman, Tenn. .... 51	Harrington, E. Son & Co. .... 50	Harrington & King Perforat. Co. .... 61	Harris, N. W., & Co. .... 36	Harris, Wm. A., Steam Eng. Co. .... 30	Hartford Safety Boiler Works. .... 30	Hartford Steam Boiler Inspection & Insurance Co. .... 58	Hartman & Durstine. .... 54	Heberling Metal Roofing Co. .... 69	Hessen Bros. & Co. .... 68	Hercules Iron Works. .... 43	Heiser Safety Boiler Co. .... 33	Heiser Electric Light Co. .... 74	Hewes & Phillips Iron Works. .... 46	Hill, Wm. E. & Co. .... 46	Hollis Spring Co. .... 69	Holmes, E. & B. .... 64	Holt Mfg. Co. .... 70	Holton Iron Roofing Co. .... 69	Hoopes & Townsend. .... 61	Hoppe, Paul F. .... 61	Hopkins Mfg. Co. .... 61	Hotel Fairmount. .... 54	Hotel Lucerne. .... 54	Honchin, A. W. .... 64	Houghton Packing Co. .... 70	Howell Wheel Co. .... 68	Hubbard, H. W. .... 70	Huffman, W. A., Imp. Co. .... 43	Hughes Steam Pump Co. .... 30	Hunting, E. B. & Co. .... 70	Hunt, Rodney, Machine Co. .... 28	Ide, A. L., & Son. .... 30	Indiana Machine Works. .... 71	Industrial Light Co. .... 49	Industry Light Co. .... 64	Ingersoll-Sergeant Rock Drill Co. .... 3	"Investor". .... 36	Iron Clad Paint Co. .... 63	Jackson & Woodin Mfg. Co. .... 73	Jacksonville, Ala. .... 33	Jarvis Engineering Co. .... 33	Jeffrey Mfg. Co. .... 44	Jenkins Bros. .... 76	Jones, H. W. Mfg. Co. .... 50	Johnson, R. M. .... 64	Johnson, Shryock & Co. .... 70	Jones of Birmingham. .... 64	Jory & Co. .... 70	Joyce, Criddle & Co. .... 70	Kanneberg Roofing Co. .... 59	Keegan & Halpin. .... 49	Kendall, Edward & Sons. .... 33	Kilbourne & Jacobs Mfg. Co. .... 30	Kimbark, Tenn. .... 15	Knoxville Car Wheel Co. .... 63	Ladd, Alfred W. .... 44	Laidlaw & Dunn Co. .... 36	Lancaster Turbine Wheel Co. .... 30	Laredo, Texas. .... 74	Lathe & Morse Tool Co. .... 63	Lawrence Machine Co. .... 38	Leffel, Jas., & Co. .... 39	Ligovsky Clay Pigson Co. .... 71	Lincoln Iron Works. .... 60	Link Belt Engineering Co. .... 61	Litofsky Mfg. Co. .... 34	Lloyd Booth Co. .... 72	Locke Bros. .... 32	Lockwood, Greene & Co. .... 43	Lockwood Mfg. Co. .... 31	Lodge & Davis Mach. Tool Co. .... 41	London & New York Land Co. .... 51	Long & Alstair Co. .... 72	Longmire Land & Imp. Co. .... 72	Loomer, H. M. & Co. .... 70	Louisville, N. O. & Texas Ry. .... 51	Lowe & Tucker. .... 69	Lowell Steam Boiler Works. .... 44	Ludlow Saylor Wire Co. .... 64	Ludlow Valve Mfg. Co. .... 33	"Lumber". .... 43	Lunheimer Brass Mfg. Co. .... 33	Lurray, Va. .... 30	Mackinnon J. A., Mach'y Co. .... 44	Makepeace, C. R. & Co. .... 43	Males, A. S., & Co. .... 44	Manly Manufacturing Co. .... 67	Manor, Chas. H. .... 26	Mason, D. N. .... 43	Mason Regulator Co. .... 43	Mast, Foss & Co. .... 43	"Mechanic". .... 43	Meinsha Wood Split Pulley Co. .... 57	McGowan, Jno. H., Co. .... 39	McLanahan & Stone. .... 61	McNeill, J. C., & Co. .... 38	McShane, H., & Co. .... 70	McShane, J. C., & Co. .... 70	McShane & Co. .... 54	Merritt, I. E., Machinery Co. .... 4	Mey, F. H. C. .... 54	Meyers, Fred, J., Mfg. Co. .... 54	Middendorf, Oliver & Co. .... 37	Middlesborough, Ky. .... 33	Miller, Geo. .... 33	Miner & Kettler. .... 34	Miner & Peck Mfg. Co. .... 62	Minnierode, Wm. .... 44	Moore, F. H. .... 60	Moore & White Co., The. .... 57	Morgan, D. F., Boiler Co. .... 70	Morris County Machine Co. .... 34	Morris Machine Works. .... 50	Morse, Williams & Co. .... 5	Munroe, R. & Son. .... 73	Munroe, R. & Son. .... 73	Murray & Stevenson. .... 43	Murray, Jas., & Son. .... 44	Myers, F. E. & Co. .... 38	Nashville Rapid Tanning & Belt Manufacturing Co. .... 66	National Pulley Covering Co. .... 44	National Sewerage & Sewage Utilization Co. .... 76	National Typewriter Co. .... 71	New Doty Mfg. Co. .... 76	New England Roller Grate Co. .... 76	New York Equipment Co. .... 44	New York Machinery Depot. .... 44	New York Railway Supply Co. .... 44	"Niagara" Hotel. .... 72	Niagara Stamping & Tool Co. .... 72	Nicholson & Waterman Mfg. Co. .... 76	Nicholson File Co. .... 76	Nier, Hartford & Mitchell. .... 43	Noble, J. W. .... 43	Nordyke & Marmon Co. .... 4	North American Metaline Co. .... 71	Northern Emery Wheel Co. .... 72	Norton Emery Wheel Co. .... 72	Noye, John T. Mfg. Co. .... 39	Nubian Iron Enamel Co. .... 43	Nunnelee, S. F., Agent. .... 51	Nye & Tredick. .... 55	Ohio Pulley & Machine Co. .... 6	Oil Well Supply Co. .... 6	Old Kentucky Route. .... 6	Olney Bros. .... 54	Otto & Westenhoff. .... 43	Otto Gas Engine Works. .... 4	Page Belting Co. .... 6	Palmer, Cunningham & Co. (Lim.). .... 54	Pancoast & Maule. .... 70	Pate, N. T. & Co. .... 70	Payne, B. W., & Sons. .... 6	Penfield, J. W., & Son. .... 59	Penna. Globe Gas Lt. Co. .... 71	Pennsylvania Steel Co. .... 62	Phila. Warehouse Co. .... 60	Phosphor-Bronze Smelt. Co. (Lim.). .... 59	Pickands, Mather & Co. .... 66	Piedmont Air Line. .... 59	Piedmont Machine Works. .... 71	Pierce, Butler & Pierce Mfg. Co. .... 76	Pittsburgh & Lake Erie R. R. .... 34	Pittsburgh Bridge Co. .... 34	Place, George. .... 44	P. O. Box 95, Birmingham, Ala. .... 43	Pollock, W. B., & Co. .... 59	Poor, H. V. & H. W. .... 59	Porter, H. K., & Co. .... 62	Porter Mfg. Co. .... 30	Potomac Bridge Wks. .... 34	Powell, A. C. & Son. .... 64	Powell & Lockwood. .... 64	Pratt, J. H. .... 43	Preble Machine Works Co. .... 44	Prentiss Tool & Supply Co. .... 44	"Profit". .... 67	Providence, R. I., Belting Co. .... 67	Prybil, P. .... 71	Pulsometer Steam Pump Co. .... 45	Raeder, Coffin & Crocker. .... 43	Rarg & Co., Alex. E. .... 30	Rattle & Nye. .... 43	Raymond, C. W. & Co. .... 39	Real Estate Investment Co., The. .... 67	Record Printing House. .... 31	Reliance Gauge Co. .... 31	Reynolds Bros. .... 71	Rice & Whitacre Mfg. Co. .... 31	Richmond City Mill Works. .... 67	Richmond Ice Mach. Co. .... 45	Richmond Locomotive & Machine Works. .... 68	Richmond Machine Works. .... 71	Riehl Bros. .... 6	Ring Refrig. & Ice Machine Co. .... 57	Roane Iron Co. .... 25	Robinson, W. A. R. .... 24	Robinson, Wm. C., & Son. .... 63	Robinson & Ott. .... 3	Rochester Machine Tool Works. .... 41	Rogers, C. A., & Co. .... 46	Rome Foundry & Machine Wks. .... 50	Ross, Josiah. .... 46	Rowley & Hermance. .... 46	Rumsey & Co., Limited. .... 76	Russell Wheel & Foundry Co. .... 39	Ryan Co., Jno. .... 39	Ryan, J. R., Mfg. Co. .... 51	Ryder & Dearth. .... 58	Salem Fdry. & Mch. Shop. .... 68	Salem Wire Nail Co. .... 76	Santley, W. R., & Co. .... 64	Saunders, D., Sons. .... 54	Scaulan, G. H., & Co. .... 6	Schaum & Uhlinger. .... 55	Schneider & Trenkamp Co. .... 49	Schuyler Elec. Co. .... 74	Sebastian May Co. .... 44	Sevier's Sons, L. F. .... 44	Sharon Boiler Works. .... 71	Shedfield, Ala. .... 18	Shenandoah, Va. .... 18	Shenandoah Valley Railroad. .... 64	Shepard, H. L. .... 64	Sherwood Mfg. Co. .... 31	Shields & Brown Co. .... 45	Shirmer, Samuel, J. .... 70	Shryock, Thos. J., & Co. .... 66	Shultz Belting Co. .... 66	Simmerly Derrick Co. .... 71	Simpkin & Hillier. .... 30	Skinner Engine Co. .... 30	Smith, Fred, H. .... 58	Smith, H. B., Machine Co. .... 48	Smith, Jas., & Co. .... 3	Smith Premier Typewriter Co. .... 71	Smith, S. Morgan. .... 50	Smith & Vail Co. .... 26	Son, Electrical Supply Co. .... 43	Southern Equipment Co. .... 43	Southern Investment Co. .... 37	Southern Investment Co. .... 37	Spiral Weld Tube Co. .... 66	Springfield Emery Wheel Mfg. Co. .... 3	Standard Dry Kiln Co. .... 3	Standard & Co. .... 3	Standard Steel Works. .... 76	Standard Tool Co. .... 68	Starr, R. F. & Co. .... 17	Stanton, Va. .... 17	Steam Stone Cutter Co. .... 60	Stedman's Fdry. & Mch. Wks. .... 73	Steel Rail Supply Co. .... 44	Stein & Schwarz. .... 43	Stevens, J., Arms & Tool Co. .... 45	Stevens & Co. .... 69	Stewart Ceramic Co. .... 69	Stickney Oil Burner Co. .... 71	Stillman House. .... 39	Stillwell & Bierce Mfg. Co. .... 39	St. Louis Iron & Mach. Works. .... 31	Stoddard, Lovering & Co. .... 55	Stow Flexible Shaft Co. .... 64	Stuebner & Woods. .... 64	Sturtevant, B. F., Co. .... 67	Swift-Vogt Machine Co. .... 57	Swift & Co. .... 43	Sword, P. L., & Son. .... 39	Sykes Iron Roofing Co. .... 69	Tacoma, Va. .... 53	Talbot, D. H. .... 71	Talbot & Sons. .... 31	Taper-Sleeve Pulley Works. .... 64	Taylor, Frederic, & Co. .... 36	Taylor Mfg. Co. .... 39	Terrill, G. W. .... 37	Terry Mfg. Co. .... 37	Thompson-Houston Electric Co. .... 74	Tift, Geo. W. Sons & Co. .... 30	Todd Pulley & Shafting Works. .... 57	Tompkins, Oliver & Co. .... 72	Toomey, Frank. .... 44	Totten & Hogg I. & S. Fdry Co. .... 18	Tredgill, Mfg. Co. .... 18	Tremor Mfg. Co. .... 39	Tudor Boiler Mfg. Co. .... 39	Union Brass Foundry. .... 6	U. S. Wind Engine & Pump Co. .... 6	Vaile & Young. .... 67	Valk & Murdoch Iron Works. .... 70	Vallby Iron Works. .... 39	Valley Pump Co. .... 29	Valley Railway. .... 4	Van Dusen & Tift. .... 28	Van Dusen Gas & Gasoline Eng. Co. .... 33	Van Noorden, E. & Co. .... 67	Van Wagener & Williams Co. .... 70	Van Wile, Irvin. .... 28	Van Winkle Gin & Mch'y Co. .... 34	Volcan Iron Works. .... 63	Volcan Iron Works Co. .... 63	Waldron & Sprout. .... 68	Walker Mfg. Co. .... 6	Walsham Emery Wheel Co. .... 72	Warfield Mfg. Co. .... 31	Washington Hyd. Press Brick Co. .... 59	Waterbury Rubber Co. .... 4	Waters & Garland. .... 4	Watson, Ben. .... 44	Watson & Stillman. .... 39	Webster, Camp & Lane Mach. Co. .... 61	Webster Manufacturing Co. .... 34	Webster, Warren & Co. .... 66	Wells Rustless Iron Co. .... 70	Western Block Co. .... 73	Western Block Co. .... 73	Western Maryland Railroad. .... 51	West Salem Land Co. .... 51	Wheeling, Madison & Clemson Manufacturing Co. .... 47	Wheeling Corrugating Co. .... 69	Wheeling & Lake Erie Ry. .... 4	White, R. T. .... 34	Whiting & Son, John L. .... 48	Whitinsville Spinning Ring Co. .... 54	Whitney & Sons, A. .... 31	Whitney, R. M. .... 72	Whitins, D. E., Machine Co. .... 68	Wier & Wilkins. .... 54	Wilder, Wm. .... 54	Williamsport Machine Co. .... 54	Williamsport Wire Rope Co. .... 60	Williams & Son, Jno. L. .... 36	Wilson & Co., H. McK. .... 64	Wilson, Colston & Co. .... 37	Windrim, Jas. H. .... 43	Winship Manufacturing Co. .... 46	Winwell Elec. Mfg. Mach'y Co. .... 60	Witherow, Jas. P. .... 46	Wolf, Fred W. Co. .... 43	Worthington, Henry R. .... 4	Wood, E. J. .... 43	Woodhouse, Samuel. .... 61	Woods Machine Co., S. A. .... 46	Wright & Wood. .... 43	Wright, Jr., R. .... 51	Wyckoff, A. & Son. .... 78

• Not in this issue.

[CONTINUED FROM PAGE 2.]

Ventilators.

Geo. F. Clark.

Merchant & Co.

E. Van Noorden & Co.

Cheney & Hewlett

Watchman's Clocks.

Cleve. Elec. Mfg. Co.

Rendu Mfg. Co.

Paul F. Hoppe.

Water Closets.

Haines, Jones & Cadbury Co.

Water Motors.

Warfield Mfg. Co.

Bellnap Motor Co.

Water Wheels.

Dayton Globe Iron Works Co.

T. C. Alcott & Son.

Allen Towns F. & Mch. Co.

Christiana Mch. Co.

Jas. Leffel & Co.

Rodney Hunt Mch. Co.

Rome Fy. & Mch. Wks.

 Stilwell & Bierce Mfg. Co. | Lancaster Turbine Wheel Co. | S. Morgan Smith. | Well Tools. | Cook Well Co. | Lockwood Mfg. Co. | Oil Well Sup. Co., Lim. | Deming Co. | Wheelbarrows. | Kilbourne & Jacobs Mfg. Co. | Stebner & Woods. | Wind Engines. | U. S. Wind Engine & Pump Co. | Man, Foot Co. | Van Winkle Gin & Mach. Co. | Wire, Wire Rope, Barbed Wire, Aus. | Williamsport Wire Rope Co. | Ludlow Saylor Wire Co. |

Wire Goods.

Fred. J. Meyers Mfg. Co.

DuRoi & Co.

Ludlow Saylor Wire Co.

Wire Nails.

Salem Wire Nail Co.

Wood-Working Machinery.

DeQuoin Iron Wks. Co., L. S. Colburn.

 Winship Mfg. Co. | Battle Creek Mach'y Co., A. & Holmes. | Frank & Co. | I. E. Merritt Mch'y Co. | P. Fryhill. | J. A. Fay & Co. | Connell & Dangler. | H. & Smith Mch. Co. | The Egan Co. | C. R. Rogers & Co. | Peter Gerlach & Co. | A. C. Powell & Son. | Cordeman, Meyer & Co. | Rowley & Hermance. | N. S. Graham & Co. | Indiana Machine Wks. | Glen Cove Machine Co. | Tremor Mfg. Co. | S. Adams & Son. | Eos & Wilkes. | S. C. Forsath Mch. Co. | Williamsport Mch. Co. | Sam. J. Shimer. | Goddell & Watern. | A. S. Woods Mch. Co. | Chattanooga Saw Wks. | W. F. & Jno. Barnes Co. | H. L. Shapley. | Defiance Machine Wks. | Josiah Ross. | Globe Machine Co. | Preble Mch. Wks. Co. | G. H. Scanlan & Co. | Wood Water Pipe. | A. Wyckoff & Son. | Wronches, etc. | Cincin. Screw & Tap Co. | Graham, Bailey & Co. |

Western Block Co.

LOCKPORT, N. Y.

"Anvil" Brand Tackle Blocks and Sheaves.

For Manila or Wire Rope, or Chain.

FOR THE BEST MILL

FOR GRINDING AND DISINTEGRATING

Phosphates, Clays,

MINERAL AND ALL DRUG MATERIALS

CORRESPOND WITH

Stedman's Foundry & Mach. Wks., Aurora, Ind.

THE JACKSON & WOODIN MFG. CO.

Cast Iron Gas and Water Pipe and Castings

OF ALL DESCRIPTIONS.

Berwick, Columbia Co., Pa.

FREIGHT CARS, CAR WHEELS, BAR IRON,

SPECIAL CASTINGS.

WEST POINT BOILER WORKS

Boilers of our patent design

 and all kinds of sheet iron work made to order. | in each | to order. |

R. Munroe & Son

23rd & Smallman Sts. Pittsburgh, Pa.

\* Not in this issue.

(CONTINUED FROM PAGE 3.)

<b>Ventilators.</b>	<b>Wire Goods.</b>
Geo. P. Clark. .... 49	Fred. J. Mayers Mfg. Co. .... 70
Merchant & Co. .... 49	Dufur & Co. .... 64
E. Van Noorden & Co. .... 44	Ludlow Saylor Wire Co. .... 64
Cheney & Hewlett. .... 44	
<b>Watchman's Clocks.</b>	<b>Wire Nails.</b>
Cleve. Elect. Mfg. Co. .... 71	Salem Wire Nail Co. .... 76
Rundt Mfg. Co. .... 18	
Paul F. Hoppe. .... 64	<b>Wood-Working Machinery.</b>
<b>Water Closet.</b>	DeQuolin Iron Wks. Co. .... 3
Haines, Jones & Cadbury Co. .... 69	L. S. Colburn. .... 70
<b>Water Motors.</b>	Winship Mfg. Co. .... 61
Warfield Mfg. Co. .... 61	Battle Creek Mach'y Co. .... 46
Belknap Motor Co. .... 61	R. & B. Holmes. .... 46
<b>Water Wheels.</b>	I. E. Merritt Mch'y Co. .... 61
Dayton Globe Iron Works Co. .... 48	P. Fryhill. .... 61
T. C. Alcott & Son. .... 3	J. A. Fay & Co. .... 61
Allen & F. & Mch. Co. .... 50	Connell & Dangler. .... 61
Christians Mch. Co. .... 26	H. B. Smith Mch. Co. .... 61
Jas. Leffel & Co. .... 43	The Egan Co. .... 61
Rodney Hunt Mch. Co. .... 43	C. B. Rogers & Co. .... 61
Rome Ry. & Mch. Wks. .... 37	Peter Gerlach & Co. .... 61
Sullivan & Mch. Co. .... 37	A. C. Powell & Son. .... 61
Lancaster Turbine Wheel Co. .... 66	Cordeman, Meyer & Co. .... 61
S. Morgan Smith. .... 3	Kowley & Hermance. .... 61
<b>Well Tools.</b>	J. S. Graham & Co. .... 61
Cook Well Co. .... 76	Indiana Machine Wks. .... 61
Lockwood Mfg. Co. .... 76	Glen Cove Machine Co. .... 61
Oil Well Sup. Co., Lim. .... 68	Trevor Mfg. Co. .... 61
Deming Co. .... 17	S. Adams & Son. .... 61
<b>Wheelbarrows.</b>	E. & Wilkes. .... 61
Kilbourne & Jacobs Mfg. Co. .... 43	S. C. Forsythe Mch. Co. .... 61
Stuebner & Woods. .... 64	Williamsport Mch. Co. .... 61
<b>Wind Engines.</b>	Sam'l. J. Shimer. .... 61
U. S. Wind Engine & Pump Co. .... 6	Goodell & Waters. .... 61
Mast, Foss & Co. .... 43	S. A. Woods Mch. Co. .... 61
Van Winkle Gin & Mach. Co. .... 3	Chattanooga Saw Wks. .... 61
<b>Wire, Wire Rope, and Barbed Wire, etc.</b>	W. F. & Jno. Barnes Co. .... 61
Williamsport Wire Rope Co. .... 60	H. L. Shepard. .... 61
Ludlow Saylor Wire Co. .... 64	Defiance Machine Wks. .... 61

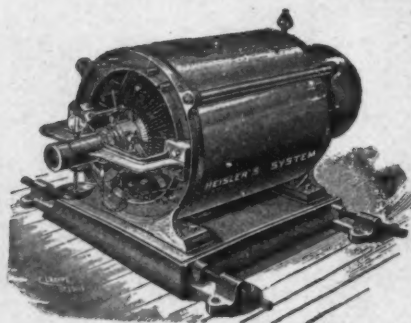
**Western Block Co.**  
**LOCKPORT, N. Y.**  
 "Anvil" Brand Tackle Blocks and Sheaves,  
 For Manila or Wire Rope, or Chain.

**FOR THE BEST MILL**  
 FOR GRINDING AND DISINTEGRATING  
**Phosphates, Clays,**  
 MINERAL AND ALL DRUG MATERIALS  
 CORRESPOND WITH  
**Stodman's Foundry & Mach. Wks., Aurora, Ind.**  
**THE JACKSON & WOODIN MFG. CO.**  
 Cast Iron Gas and Water Pipe and Castings  
 OF ALL DESCRIPTIONS  
 Berwick, Columbia Co., Pa.  
 FREIGHT CARS, CAR WHEELS, BAR IRON,  
 SPECIAL CASTINGS.

**WEST POINT BOILER WORKS**  
 Boilers of all kinds of steel iron work made to order  
 and all kinds of  
 and Plate  
 in each.  
**R. MUNROE & SON**  
 23rd & Smallman Sts. Pittsburgh, Pa.



**THE HEISLER PATENT**  
**Long Distance Incandescent Electric Light System.**  
 UNEQUALLED FOR DISTRIBUTION OVER WIDE AREAS.



**S**PECIALY ADAPTED FOR STREET, COMMERCIAL & DOMESTIC ILLUMINATION FROM CENTRAL STATIONS.

Plant may be located where power can be secured cheapest, even if miles distant from the lighting. Safety, Reliability, and Financial Success fully demonstrated. Plan of Wiring the Simplest, Cheapest and most Efficient. Strictly Series. Noted for the Brilliancy and Beauty of the Light. Lamps, 70 to 100 Candle Power; Long Life without Blackening. Dynamo Self-contained and perfectly Automatic.

**Heisler Electric Light Company,**

809 to 817 South Seventh Street, ST. LOUIS, MO.

"Awarded the Highest Distinction—a Gold Medal—by the International Jury at the Universal Exposition, Paris, 1889."

Send for Circulars.

Correspondence Solicited.

Arc and Incandescent  
Electric Lights.

Water Works,  
Motors.

Illuminating and Fuel  
Gases.

**L. N. COX,**

16 Fifth Street, S. E.

WASHINGTON, D. C.

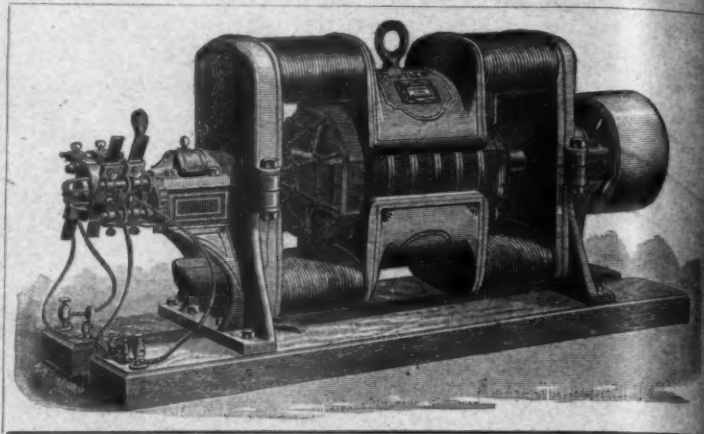
Correspondence Solicited. Plans, Specifications, Estimates, &c., cheerfully furnished.

Subscribe to the MANUFACTURERS' RECORD  
 Price \$4.00 a year or 6 months for \$2.00.

BUY THE  
**Schuyler Apparatus**

IF YOU WANT

**The Best Arc Lighting System.**



Office and Factory:

MIDDLETOWN, CONN.

WESTERN OFFICE:

456 "THE ROOKERY," CHICAGO.

**The THOMSON-HOUSTON ELECTRIC COMPANY,**

MANUFACTURER OF

**D**ynamos and **L**amps for **E**lectric **A**rc **L**ighting

**For Central Stations and Isolated Plants.**

**70,000 Arc Lamps in Daily Operation.**

Fifty-two per cent. of all the Arc Lamps used by Gas Companies, and twenty-five per cent. of the entire number used in the United States are of **THOMSON-HOUSTON MANUFACTURE**. What better proof than this could be offered of the merits of the system.

**THE THOMSON-HOUSTON ELECTRIC CO.**

620 Atlantic Avenue, BOSTON, MASS.

148 Michigan Avenue, CHICAGO, ILL.

Wall and Loyd Streets, ATLANTA, GA.

403-405 Sibley St., ST. PAUL, MINN.

No. 215 West Fourth Street, Cincinnati, Ohio.



THE

**BRUSH ELECTRIC COMPANY,**

\* CLEVELAND, OHIO. \*

The Best and Most Complete Systems of

**Are Electric Lighting for Central Stations, Etc.**

INCANDESCENCE ELECTRIC LIGHTING,

Alternating Current or Long Distance Lighting,

**Electrical Power Transmission and Distribution.**

FUNDAMENTAL PATENTS ALREADY SUSTAINED BY U. S. COURTS.

**The Short Electric Railway Company,**

\* CONTRACTORS \*

**FOR ELECTRIC RAILWAYS ON THE SHORT SYSTEMS**

AND GENERAL RAILWAY AGENTS FOR

**THE BRUSH ELECTRIC COMPANY.**

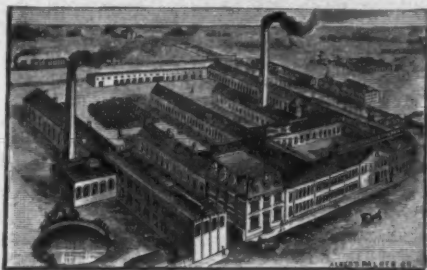
OFFICE AND WORKS: - - - - CLEVELAND, OHIO.

## Nicholson File Company,

PROVIDENCE, R. I.

IN  
QUANTITY  
UNEQUALLED.

IN  
VARIETY  
UN-  
PARALLELED.



IN  
QUALITY  
UNEXCELLED.

IN  
REPUTATION  
UN-  
RIVALLED.

Manufacturers of EVERY KIND of

## FILES AND RASPS.

## CHICKASAW IRON WORKS,

JOHN E. RANDLE & CO., Prop'rs,  
MEMPHIS, TENN.

MANUFACTURERS OF

## Architectural Iron Work,

IRON AND BRASS CASTINGS.

LOCOMOTIVES for Saw Mill Tramways, Log  
and Lumber Trucks.

WROUGHT IRON WORK.

ATLAS ENGINES AND BOILERS.

Saw Mills, Cotton Presses, Shafting, Couplings, Pulleys, &c.

MACHINERY SUPPLIES AND REPAIRS.



## The SALEM WIRE NAIL CO.

MANUFACTURERS

## Wire Nails

Works: SALEM, O.; FINDLAY, O.

General Office: SALEM, OHIO.

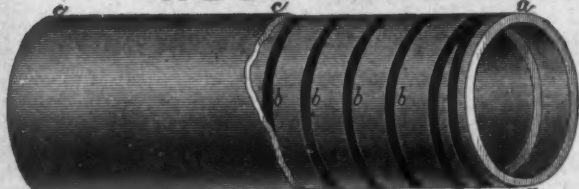
BRANCH OFFICES:

261 Broadway, New York. 209 Phenix Bldg., Chicago.  
123 Souard Street, St. Louis. 4 Wiggins Block, Cincinnati.

## A. WYCKOFF & SON, ELMIRA, N. Y.

MANUFACTURERS OF

## WOOD WATER PIPE



a Wood. b Hoop-iron bands. c Asphaltum coating.

FOR  
Coal and Iron Mines  
COKE WORKS  
AND  
General Water  
SUPPLY.

SEND FOR  
CATALOGUES AND  
PRICES.

CENTRIFUGAL  
ROTARY AND PISTON  
PUMPS.

Also HOUSE PUMPS.

## PUMPS

FIRE ENGINES,  
HOOK AND LADDER  
TRUCKS  
AND HOSE CARTS.

Send for Catalogue.

## RUMSEY & CO., Limited,

Seneca Falls, N. Y., U. S. A.

## THE WEST SYSTEM

OF

## Improved Sewerage.

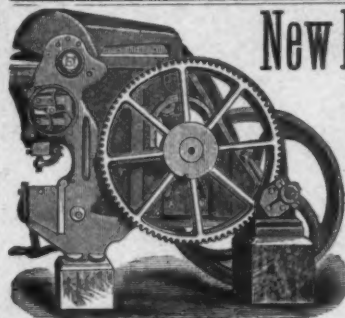
Sewage Disposal Without Offence.

**NO SEWER GAS.**

Officials or other Responsible Parties please  
Send for Pamphlets.

The National Sewerage & Sewage Utilization Co.

280 Broadway, New York.



## New Doty Manufacturing Co.

Manufacturers of Hand and Belt Power

## Punching & Shearing MACHINERY.

Boiler Makers' Rolls  
JANESVILLE, WIS.



## PIERCE, BUTLER & PIERCE MFG. CO.,

MAIN OFFICE, SYRACUSE, N. Y., U.S.A.  
NEW YORK BOSTON CHICAGO  
60 Barclay St. 237 Franklin St. 96 Lake St.

## FLORIDA HEATING APPARATUS

Made in 19 Sizes for Steam. For STEAM or WATER.  
Made in 14 Sizes for Water. HARD or SOFT COAL.  
Made in 15 Sizes for Soft Coal. THOUSANDS IN ACTUAL USE

WASHINGTON, D. C. - N. J. CHAPPELLE & CO.  
BALTIMORE, MD. - ALVA HUBBARD & CO.  
KANSAS CITY, MO. - GOSCH HEATING & PLUMBING CO.  
ST. LOUIS, MO. - N. O. NELSON MFG. CO.  
EUROPEAN ROBERT DAWSON & CO. LIMITED, ST. ALBY BRIDGE, ENGLAND.  
AGENTS: A. B. RECK, COPENHAGEN, DENMARK.  
Write for our 3 catalogues.



## DETROIT Steel Tackle Block.

HALF THE COST of hoisting saved to Machinists,  
Builders, Contractors and OTHERS. Admitted  
to be the greatest improvement EVER made  
in Tackle Blocks. Write for Catalogue.

## FULTON IRON & ENGINE WORKS,

Established 1852. 19 Brush St., Detroit, Mich.



## The ORIGINAL UNVULCANIZED PACKING.

As it is the Packing by which all  
others are compared.  
Accept no packing as JENKINS' PACKING  
unless stamped with our "Trade Mark."

JENKINS' BROS.  
71 John St., New York. 21 N. Fifth St. Philadelphia.  
105 Milk St., Boston. 54 Dearborn St., Chicago.

## THE STANDARD TOOL COMPANY, Cleveland, Ohio.



Manufacturers of Bit Stock Drills, Straight Shank Drills, Taper Shank Drills,  
Taper Reamers, Milling Cutters, Chucks, Hatchet Drills, Screw-Drivers,  
Bits, Twist Drill Grinding Machines.

Use Our No. 6 1-2 AXLE For Trucks, Express and Delivery Wagons.  
CLEVELAND AXLE MFG. CO., Cleveland, Ohio.



Before Purchasing Elsewhere write us for Catalogue and Prices.

## The KILBOURNE & JACOBS MFG. CO.

COLUMBUS, OHIO, U. S. A.

